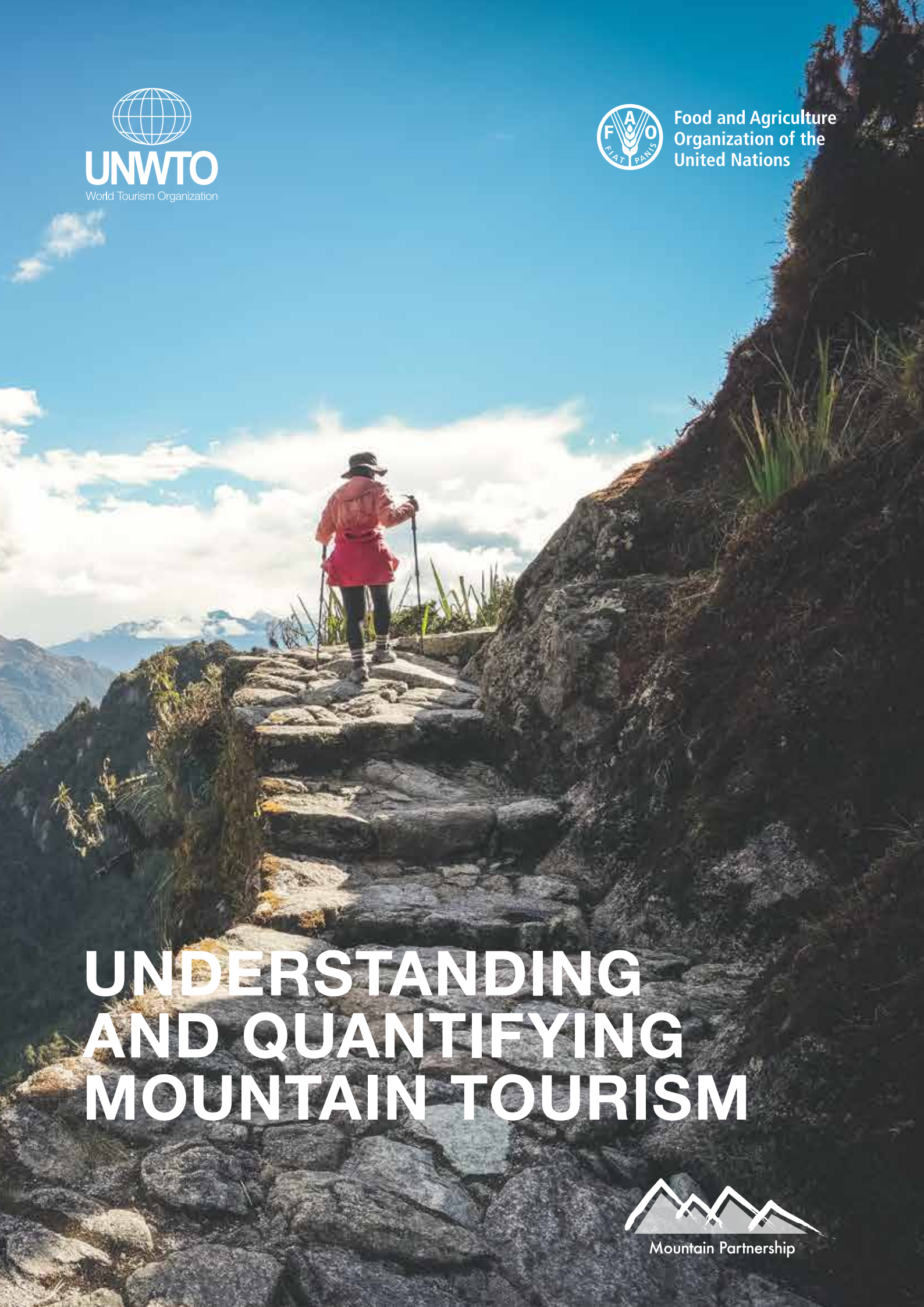

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UNDERSTANDING AND QUANTIFYING MOUNTAIN TOURISM

Mountain Partnership

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UNDERSTANDING AND QUANTIFYING MOUNTAIN TOURISM

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FOREWORD

All around the world, mountain tourism is driven by the human desire to experience nature in unique settings. In turn, tourism has proved to be a lifeline for many communities in mountain regions, and it can play a leading role in sustaining systems that contribute to protect these fragile ecosystems from overexploitation and support their adaptation to climate change.

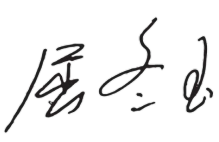
When the pandemic led to lockdowns, mountains became an attractive option for travellers looking for less crowded destinations and open-air experiences. Now, as international travel has returned, we have an opportunity to rethink mountain tourism, its impact on natural resources and livelihoods, and how to manage it better.

In this regard, measuring the volume of visitors to mountains is the first vital step we need to take. With the right data, we can better control the dispersal of visitor flows, support adequate planning, improve knowledge on visitor patterns, build sustainable products in line with consumer needs, and create suitable policies that will foster sustainable development and make sure tourism activities benefit local communities.

This study, jointly developed by the Food and Agriculture Organization of the United Nations (FAO), the Mountain Partnership Secretariat and the World Tourism Organization (UNWTO), addresses the need for relevant data and provides information to improve our understanding of mountain tourism. The study also identifies trends and provides a set of recommendations to advance the measurement of mountain tourism, including the enhancement of official tourism statistics through the use of big data and new technologies.

The United Nations proclaimed 2022 as the International Year of Sustainable Mountain Development to increase awareness of its importance and to contribute to the achievement of the Sustainable Development Goals (SDGs). That same year also marked the 20th anniversary from the first International Year ever devoted to mountains as well as the 20th anniversary of the Mountain Partnership.

UNWTO, FAO and the Mountain Partnership have been long collaborating to advance the contribution to the achievement of the 2030 Agenda for Sustainable Development and the SDGs. This study is a follow-up to the 2021 joint UNWTO/FAO publication *Mountain Tourism – Towards a More Sustainable Path*. It will enhance our understanding of tourism in mountains, encompassing its full economic, social and environmental impacts, to ensure a more efficient, inclusive, resilient, sustainable and accessible development of mountain tourism that leaves no one behind.



QU Dongyu
Director-General, FAO

Zurab Pololikashvili
Secretary-General, UNWTO

EXECUTIVE SUMMARY

Mountain tourism has become an increasingly relevant motivation for travel, yet quantifying its volume represents a challenge due to the lack of data

As of 2017, mountains were home to about 1.1 billion people, representing around 15% of the global population. Mountains are also among the most fragile ecosystems, which are under threat from climate change and overexploitation.

When managed in a sustainable manner, tourism has proved to be a lifeline for many communities in mountain regions and can play a leading role in protecting these fragile ecosystems. Many mountain destinations showed particular resilience during the pandemic, as visitors looked for less crowded destinations and open-air experiences, amid global lockdowns. At the same time, other mountain destinations with traditionally more tourism traffic suffered from the lack of visitors which impacted their economies and livelihoods.

As the sector recovers from the unprecedented impact of the COVID-19 pandemic, there is an opportunity to rethink mountain tourism and its impact, to manage it better, and to harness its contribution towards a more resilient, inclusive and sustainable future for mountains and its communities.

One of the recommendations emerging from the 2021 report *Mountain tourism – Towards a more sustainable path* (by the Mountain Partnership and UNWTO)[1] highlighted the need to improve the measurement and monitoring of the impact of tourism in mountains, making a special emphasis on lack of data to quantify mountain tourism at regional and global level.

This new joint study Understanding and quantifying mountain tourism, aims to shed light on the volume that mountain tourism represents globally and in the different world regions. It also looks into current trends in mountain tourism and contribute to improve its measurement as a means of better planning and management of its benefits and impact in mountain areas.

Given the limited data on domestic mountain tourism performed by residents, estimates are provided for the share of mountain tourism in international tourism only.

Mountain tourism is estimated to represent between 9% and 16% of total international tourist arrivals, but with significant differences between countries

Mountain tourism is estimated to represent between 9% and 16% of total international tourist arrivals, which is equivalent to a range of between 195 and 375 million international arrivals, based on 2019 numbers.

The range shows differences across regions and countries. In countries where mountain tourism is a primary motivation of visit and where there is a higher tourism concentration and specialized product offer, the share is also higher in the total of international tourism. In other destinations, with large mountain ranges, the share of mountain tourism vis-a-vis total inbound is less important due to a more diversified tourism offer or an early stage of mountain tourism development, or due to a higher weight of domestic demand in mountain tourism.

1 Romeo, R.; Russo,, L.; Parisi, F.; Notarianni, M.; Manuelli, S. and Carvão, S. (2021), *Mountain tourism – Towards a more sustainable path,* FAO, Rome, DOI: https://doi.org/10.4060/cb7884en.

A step-by-step approach to estimate the size of mountain tourism

In order to estimate the share of mountain tourism in international tourist arrivals at the global and regional level, the study took a step-by-step methodological approach, including the identification of mountain destinations and the collection of available data on mountain tourism.

Based on the United Nations Environment Programme World Conservation Monitoring Centre's (UNEP-WCMC) classification,[2] 150 countries having relevant peaks and mountain ranges (with an elevation over 1,000 m) were shortlisted as the focus of the study.

The following indicators were identified and taken into consideration for the exercise of determining the market share of mountain tourism:

- Number of international tourist arrivals (overnight visitors) by country, with the breakdown by purpose of visit; and any relevant domestic tourism data for each country;
- Number of visitors to national parks, ski resorts and other mountain landmarks;
- Available mountain tourism data (overnight visitors, nights in accommodation hotels, among other); and
- Market studies and surveys on travel motivations and tourism segments on outdoor activities.

The desk research was complemented with a survey among UNWTO member states. Countries responding to the survey (a total of 46 countries from the five world regions and accounting for over 40% of total international tourist arrivals) were asked to provide an estimated share of mountain tourism in their inbound tourism, and to identify trends and challenges for the development of mountain tourism. From the 46 countries, a total of 32 provided an estimate on the share of mountain tourism in their international demand.

Combining the share of leisure tourism (55% of international tourist arrivals in 2019) and incorporating the data from the survey for the 32 countries indicating a share of mountain tourism, together with the analysis of the data collected for the selected 150 countries with relevant mountains for tourism, the process allowed to estimate a market share range for mountain tourism.

Lack of data remains a key challenge

The lack of data regarding mountain tourism, identified already in the 2021 FAO/UNWTO report[3] is confirmed by the research conducted for the current report.

Most respondents to the survey underlined the limitation (46%) or total unavailability (40%) of data on mountain tourism. Timeliness, as well as the lack of disaggregated and standardized data, represent important challenges for the adequate measurement of tourism flows in mountains, including granularity and comparability. In addition, many respondents stated that indicators on

2 The UNEP-WCMC classification is based on: Kapos, V. et al. (2000), 'Developing a map of the world's mountain forests', in: Price, M.F. and Butt, N. (eds.) (2000), *Forests in sustainable mountain development: a state of knowledge report for 2000,* CAB International, Wallingford, pp. 4–19, DOI: https://doi.org/10.1079/9780851994468.0004; and further revision in UNEP World Conservation Monitoring Centre Mountain Watch (2002), *Mountain watch: environmental change and sustainable development in mountains,* UNEP-WCMC, Cambridge.

3 Romeo, R.; Russo, L.; Parisi, F.; Notarianni, M.; Manuelli, S. and Carvão, S. (2021), *Mountain tourism – Towards a more sustainable path,* FAO, Rome, DOI: https://doi.org/10.4060/cb7884en.

Table ES.1: Estimated share of mountain tourism in international tourist arrivals, world and regions

World (sub)region	Lower range (million)	Higher range (million)	Lower range (share, %)	Higher range (share, %)
Global	**195**	**375**	**9**	**16**
Africa	**4**	**8**	**6**	**11**
North Africa	1	2	4	8
Sub-Saharan Africa	3	6	7	13
Americas	**35**	**70**	**9**	**17**
Caribbean	1	2	2	4
Central America	3	5	17	28
North America	24	49	8	17
South America	7	12	18	30
Asia and the Pacific	**45**	**90**	**8**	**17**
North-East Asia	37	74	12	23
Oceania	1	2	7	14
South Asia	2	4	6	12
South-East Asia	5	10	2	5
Europe	**112**	**205**	**9**	**17**
Central/Eastern Europe	20	40	6	13
Northern Europe	4	8	4	7
Southern/Mediterranean Europe	36	70	8	16
Western Europe	52	87	16	26
Middle East	**2**	**5**	**2**	**5**

Note: (Sub)region groupings based on UNWTO classification.

the socioeconomic contribution of mountain tourism (e.g., tourism revenues, average expenditure, tourism employment) are not available.

According to survey responses (of 100% total), available data is mostly collected from official tourism statistics (47%) and through the number of entrances to parks or natural areas (32%). Around 17% of respondents collect data from surveys and only 4% from mobile data.

A collective effort involving public and private stakeholders throughout the value chain can improve the collection, standardization and delivery of data for a more comprehensive assessment of mountain tourism and help to raise awareness of its socioeconomic importance, in order to develop more targeted policies that can create jobs, support micro-, small and medium-sized enterprises (MSMEs) and attract green investments in infrastructure and the digitalization of tourism services. Moreover, such data, as well as a regular monitoring of demand and impact, is essential to ensure the sustainable planning and management of tourism in mountain areas, define and control carrying capacity and promote adequate measures to manage flows and their respective impacts on natural resources and waste generation, among others.

Trends and challenges

Some key trends and challenges arising from the study with regard to the development of sustainable mountain tourism and the crucial role measurement can play are highlighted in the following points:

- According to survey responses (46), most destinations (60%) welcomed both international and domestic tourists. Around 30% of answers indicated that visitors were mainly domestic while only 10% indicated that they were mostly international.

- These figures show that there is still potential for many destinations to attract new segments, both domestic and international.

- Around 41% of respondents define their destination as established. Similarly, 41% define themselves as emerging destinations. 7% of the respondents point out that mountain tourism could draw attention in the future. The remaining 11% of respondents see little room for development.

- This shows that there is a mix of established and emerging destinations, and that there may be a potential for further development.

- Only half of the countries responding offer an all-year-round experience, while 29% indicated winter and 19% summer to be the peak season. This means that there is still much potential for product development outside peak seasons in mountains.

- Most respondents to the survey indicated that the predominant activities related to mountain tourism in their destinations are walking and hiking, as well as nature tourism. These were followed by rural tourism and winter sports.

- Asia and the Pacific was by far the region to welcome the largest number of visitors to natural parks, while Europe generates the highest number of skier days.

- Most respondents to the survey identified the creation of opportunities for local communities, the generation of economic revenues, as well as the creation of sustainable products as the main purposes of mountain tourism, in addition to protecting natural and cultural heritage, spreading tourism flows, complementing tourism offer and addressing seasonality.

- The main challenges for an effective development and promotion of mountain tourism are mostly related to adequate infrastructure and sustainability, followed by product development, connectivity and public-private collaboration.

Based on these insights, it can be underlined that:

- There is a need to strengthen **public-private-community partnerships,** in particular the relationship with local communities, **to create tourism products** related to gastronomy, nature, wellness or rural tourism. This would enable an

all-year round tourism in mountains to tackle seasonality, which is of upmost importance when climate change is altering the seasonal patterns in mountains. Measuring tourism flows in mountains would help destinations to set strategies aimed at reducing strong seasonal demand that characterizes this segment by:

  - **Spreading** tourism flows through reducing pressure to most visited coastal and urban destinations while also spreading the demand of mountain tourism all year around,

  - **Sharing** economic benefits of tourism among more territories to reduce regional imbalances and empower local rural and mountain communities by creating local employment opportunities; and

  - Ensuring the **preservation** of cultural and natural heritage to protect the essence and authenticity of destinations.

- It is key to promote **domestic tourism** in mountains, which have proved to be resilient during the pandemic. The resilience of domestic tourism in mountain regions should lead to a full recovery from international markets to mountains in the coming years.

RECOMMENDATIONS

To support the sustainability and resilience of mountain communities and ecosystems and ensure mountain tourism development is aligned with the Sustainable Development Goals (SDGs), the understanding and measurement of tourism is key.

Recommendations to improve the information about mountain tourism demand include:

- Assess the use of **mobile positioning data** to measure the number of visitors in mountain areas, their origin, their average length of stay and recurrence, as shown by the examples of initiatives taken by Andorra, Poland and Spain. The exchange of experiences and best practices among destinations could lead the way to the implementation of innovative solutions to enhance measurement beyond the more traditional methods.

- **Ensure that the measurement goes beyond volume and that it includes the three dimensions of sustainability:** economic, social and environmental. Monitoring tourism in mountains and its impact is critical to better manage resources and waste, respecting the carrying capacity of destinations. As a reference, the South Tyrolean Observatory, which takes part of the UNWTO International Network of Tourism Observatories (INSTO),[4] produces **data** and indicators to provide holistic data on the impact of tourism in the region, ranging from waste management to measuring local and visitor satisfaction.

- **Use data and evidence-based tourism policies and strategies** in mountain areas to maximize the impact of tourism on employment and ensure social sustainability, as well as manage the negative impact on resources and the environment.

- Enhance **market intelligence** to attract new segments and better understand consumer trends, as well as to embrace the **digitalization** of the sector reducing the digital divide enhancing accessibility.

- To further underline the importance of mountain tourism, **national tourism administrations (NTAs) should identify the most important mountain destinations and support the creation of specific mountain tourism observatories.**

4 World Tourism Organization (n.d.), *UNWTO International Network of Sustainable Tourism Observatories,* UNWTO, Madrid, online available at: https://www.unwto.org/sustainable-development/unwto-international-network-of-sustainable-tourism-observatories [25-11-2022].

INTRODUCTION

MOUNTAIN TOURISM – AN OPPORTUNITY TO PROMOTE SUSTAINABILITY AND INCLUSION

As of 2017, mountains were home to about 1.1 billion people, representing around 15% of the global population and about half of the world's biodiversity hotspots.[5]

Mountains are also among the most fragile ecosystems, under threat from climate change and overexploitation,[6] while mountain communities face considerable challenges in terms of income generation and opportunities for development. Mountain communities are particularly vulnerable to food insecurity and suffer from poverty, marginalization and inequitable gender dynamics.[7]

The United Nations (UN) proclaimed 2022 the International Year of Sustainable Mountain Development. The resolution *International Year of Sustainable Mountain Development, 2022*[8] invites member states, organizations of the UN system and other international organizations and stakeholders, including civil society, private sector and academia, to observe the International Year to increase awareness of the importance of sustainable mountain development and the conservation and sustainable use of mountain ecosystems.

In the 2022 Aspen Declaration,[9] the Mountain Partnership stressed the need for cooperation among mountain countries on a wide range of issues, including the economy, social development, environment, culture, science and education, and achieving the SDGs.

Mountain economies rely mostly on agriculture, forestry and tourism. Mountain tourism is driven by the human desire to explore the outdoors and experience nature in unique settings. Compared to other destinations, the natural attractions and appealing climate in mountains provide ideal conditions for tourism throughout the year, making the sector a crucial opportunity for sustainable development in mountainous regions.

5 United Nations (n.d.), 'Women move mountains', available online at: https://www.un.org/en/observances/mountain-day [24-11-2022].

6 United Nations (n.d.), 'Women move mountains', available online at: https://www.un.org/en/observances/mountain-day [24-11-2022].

7 Mountain Partnership (n.d.), 'Food security in mountains', FAO, available online at: https://www.fao.org/mountain-partnership/our-work/focusareas/foodsecurity/en/ [24-11-2022].

8 United Nations (n.d.), *General Assembly, Resolution of the 76th Session A/76/L.28 (16 December 2021),* available online at: https://www.un.org/en/ga/76/resolutions.shtml [24-11-2022].

9 Mountain Partnership (2022), *The Aspen Declaration: A new momentum for mountains,* FAO, available online at: https://www.fao.org/mountain-partnership/en/ and https://www.fao.org/fileadmin/templates/mountain_partnership/doc/Global_Meeting/Aspen_Declaration_2022.pdf [24-11-2022].

When managed well, sustainable mountain tourism can generate important livelihood opportunities contributing to socioeconomic development and social inclusion, as well as landscape and biodiversity conservation. It can help preserve the natural, cultural and spiritual heritage of mountains, promote local crafts, foods and recipes, and celebrate traditional practices such as local festivals. Yet, mountain tourism also presents considerable challenges in terms of adequate planning and management of visitor flows.

Prior to the pandemic, the tourism sector was one of the most important economic sectors in the world, with tourism direct GDP accounting for USD 3.5 trillion in 2019, or 4% of the world's GDP, representing 7% of total exports.[10]

When COVID-19 emerged, tourism was one of the hardest hit sectors, with an immense impact on economies, businesses, jobs and livelihoods across the globe. Restrictions caused by the pandemic have further heightened the vulnerabilities of mountain communities.

After an unprecedented plunge in international travel in 2020 and 2021, international tourism saw a major rebound in 2022, particularly during the northern hemisphere's summer season. Preliminary UNWTO data indicates over 900 million international tourist arrivals in 2022, more than double those recorded in 2021, or 63% of pre-pandemic levels.[11] Export revenues from tourism could reach USD 1.2 to 1.3 trillion in 2022, a 60%–70% increase over 2021, though still 20%–30% below the USD 1.8 trillion recorded in 2019.[12]

As the sector recovers, there is an opportunity to rethink tourism, including mountain tourism, and its impact on natural resources and livelihoods. It is an opportunity to manage it better and harness its potential towards a more resilient, inclusive and sustainable future for mountains and their communities.

Data and evidence-based tourism policies and strategies will be essential to maximize the positive impacts of mountain tourism on employment and sustainable economic diversification, while contributing to reducing its negative impacts.

10 World Tourism Organization (2022/d), *UNWTO World Tourism Barometer,* volume 20, issue 5, September 2022, UNWTO, Madrid, DOI: https://doi.org/10.18111/wtobarometereng.

11 World Tourism Organization (2023), *UNWTO World Tourism Barometer,* volume 21, issue 1, January 2023, UNWTO, Madrid, DOI: https://doi.org/10.18111/wtobarometereng.

12 World Tourism Organization (2022/e), *UNWTO World Tourism Barometer,* volume 20, issue 6, November 2022, UNWTO, Madrid, DOI: https://doi.org/10.18111/wtobarometereng.

14

UNDERSTANDING THE IMPACT OF MOUNTAIN TOURISM

Mindful of the close link between tourism and mountains – its opportunities and challenges – UNWTO and the Mountain Partnership have been long collaborating to advance the tourism sector's contribution to the 2030 Agenda and the 17 SDGs. This collaboration has been reinforced by the 2020 Memorandum of Understanding between UNWTO and FAO and several joint activities thereafter.

To mark International Mountain Day 2021, dedicated to Sustainable Mountain Tourism, UNWTO and FAO released the report *Mountain Tourism – Towards a more Sustainable Path.*[13]

As an outcome of the report, the Mountain Partnership and UNWTO recommended the following actions:

1. Promote climate-sensitive, low-impact tourism in mountains;

2. Monitor tourism in mountains and its impact to better manage resources and waste produced, respecting destinations' carrying capacity;

3. Empower mountain communities to take the lead in tourism development;

4. Strengthen public-private partnerships to innovate and develop year-round tourist offerings; and

5. Invest in infrastructure, particularly in the digitalization of tourism services, in remote mountain regions.

An additional conclusion of the 2021 report was the need to address the lack of data to quantify mountain tourism at regional and global level.

13 Romeo, R.; Russo, L.; Parisi, F.; Notarianni, M.; Manuelli, S. and Carvão, S. (2021), *Mountain Tourism – Towards a more Sustainable Path,* FAO, Rome, DOI: https://doi.org/10.4060/cb7884en.

In 2007, the United Nations Environment Programme (UNEP) published an estimated global figure of mountain tourism and its economic impact: "Mountain areas are second only to coasts and islands as popular tourism destinations, generating 15–20% of annual global tourism or USD 70–90 billion per year".[14]

These widely quoted estimates have become the reference for the share of mountain areas in global tourism and its economic contribution. However, UNEP does not specify if global tourism refers to international tourism only. Given the limited availability of data, determining the positioning of mountain areas vis-à-vis other forms of tourism, such as coasts and islands – as reflected in UNEP's estimates –, appears not to be evident.

Despite the exponential growth of international tourism worldwide (from 914 million arrivals in 2007 to nearly 1.5 billion in 2019), no update for the global estimate of tourism share in mountains has been produced since 2007.

This publication aims to fill existing knowledge gaps about the size and importance of mountain tourism, globally and in the world's regions, as well as to identify possibilities for improved measurement of this tourism segment. It provides:

- Estimates of the share of mountain tourism in international tourism at global and regional level (for Africa, the Americas, Asia and the Pacific, Europe and the Middle East);
- A summary of the trends, challenges and opportunities related to the measurement of mountain tourism and the promotion of sustainable mountain development; and
- Case studies from selected countries on the use of new technologies for measuring mountain tourism and approaches to measuring tourism sustainability in its economic, social and environmental dimensions.

14 United Nations Environment Programme (2007), *Tourism and Mountains – A Practical Guide to Managing the Environmental and Social Impacts of Mountain Tours,* UNEP, Paris, URI: https://wedocs.unep.org/20.500.11822/7687.

01 MEASURING MOUNTAIN TOURISM – METHODOLOGY

KEY MESSAGES:

- The availability of specific data on mountain tourism is very limited with only a few countries reporting mountain tourism related data on volume, including arrivals and overnight stays, in mountain areas or resorts on a regular basis;
- Data on ski demand is available through reports by public and private entities running ski resorts, but this data only provides a limited picture of mountain tourism as it excludes areas with no such infrastructure as well as all demand outside winter;
- There is almost no data available on the economic, social and environmental impact of mountain tourism;
- Given the limited data on domestic mountain tourism, estimates are provided for the share of mountain tourism in international tourism only; and
- To understand and estimate the share of mountain tourism in international tourism worldwide and at regional level, a specific methodological approach has been developed for the purpose of this report.

1.1 INTRODUCTION

There is a lack of comparable, updated and standardized statistical data on mountain tourism at national or local level. Consequently, to understand and estimate the share of mountain tourism in international tourism worldwide and at regional level, a specific methodological approach has been developed for the purpose of this report.

The approach is based on the selection of the most relevant countries for mountain tourism, the motivation of travelers ('leisure' as opposed to other travel purposes) and the market share of tourism in mountain destinations.

The methodology combined a bespoke online survey to UNWTO member states[15] with desk research to collect data on international and, when available, domestic visitors by country, data available specifically on mountain tourism, reported preferably at national level, including overnight stays and number of visitors; as well as market studies and data on visitors to national parks and ski resorts.

The main source of information was official tourism statistics, complemented by data on entrances to parks in natural areas, number of skier days and the survey results. Furthermore, extrapolations were made to compare information across available sources and estimate the share of mountain tourism in international tourism.

Datasets came from the UNWTO *Compendium of Tourism Statistics*[16] which includes data for 201 countries and territories. Over 170 countries report data on international tourist arrivals (inbound tourism), of which 143 provide data on 'purpose of visit', a coverage of more than 70%. In 2019, 'leisure' accounted for the motivation of 55% of all international tourist arrivals worldwide. Data on domestic tourism is limited compared to inbound tourism with less than 80 countries[17] providing data on the number of domestic visitors and/or overnighting tourists, and only 58 countries providing the breakdown by purpose of visit.

This study set out to develop a methodology to quantify mountain tourism for both international and domestic tourism, however a representative assessment could only be done on international tourism. The limited availability of data on domestic tourism, including trips by country and motivation, is not sufficient to establish the overall size of the domestic tourism market and, consequently, estimate the volume of domestic mountain tourism. Nevertheless, the report will include available data on domestic tourism in terms of ski demand, as well as the few examples of those countries where domestic data is available.

15 Refer to Annex I: Survey for detailed responses.

16 World Tourism Organization (2022/b), *Compendium of Tourism Statistics, Data 2016–2020, 2022 Edition,* UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284423583.

17 World Tourism Organization (2020/c), *UNWTO Briefing Note – Tourism and COVID-19, Issue 3. Understanding Domestic Tourism and Seizing its Opportunities,* UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284422111.

1.2 DEFINITIONS AND METHODOLOGICAL APPROACH

1.2.1 DEFINITION OF MOUNTAIN TOURISM

This study uses the UNWTO definition of *mountain tourism* which is "a type of tourism activity which takes place in a defined and limited geographical space such as hills or mountains with distinctive characteristics and attributes that are inherent to a specific landscape, topography, climate, biodiversity (flora and fauna) and local community. It encompasses a broad range of outdoor leisure and sports activities."[18]

This definition introduces two essential elements: (1) the **geography and its attributes;** and (2) the **activities:**

- The **geographical** component relates to the diversity of mountain ranges and peaks, combined with the **attributes,** as the natural and human-made environment where tourism happens.

- Mountains offer various levels of **activities,** most of them connected to the outdoors and different types of sport, which highlights the direct link between tourism and its impact on surrounding landscape and biodiversity.

1.2.2 DEFINING COUNTRIES AS MOUNTAIN TOURISM DESTINATIONS

For the purpose of this publication, mountain tourism data were estimated only for countries considered mountainous. The United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)[19] mountain classification was used for defining mountain areas (box 1.1). According to this mountain classification, 150 countries out of 195 worldwide were considered relevant for this study because they have at least one mountainous area falling between classes 1 and 5. The 45 remaining countries did not fit into this classification and were therefore considered not relevant for this study (i.e, they did not have any mountain area or had mountainous area falling exclusively under class 6).

18 World Tourism Organization (2019/a), *UNWTO Tourism Definitions,* UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284420858.

19 The UNEP-WCMC classification is based on: Kapos, V. et al. (2000), 'Developing a map of the world's mountain forests', in: Price, M.F. and Butt, N. (eds.) (2000), *Forests in sustainable mountain development: a state of knowledge report for 2000,* CAB International, Wallingford, pp. 4–19, DOI: https://doi.org/10.1079/9780851994468.0004; and further revision in
UNEP World Conservation Monitoring Centre Mountain Watch (2002), *Mountain watch: environmental change and sustainable development in mountains,* UNEP-WCMC, Cambridge.

1.2.3 TRAVEL MOTIVATION

According to the *International Recommendation for Tourism Statistics* (IRTS:2008), trips are classified according to their main purpose,[20] and divided into two main groups: (1) 'personal' (e.g., 'holidays, leisure, recreation'; 'visiting friends and relatives', etc.); and (2) 'business and professional'.

The purpose category 'holidays, leisure, recreation' within 'personal travel' has been used as the framework to determine a reasonable market share of mountain tourism. Data on non-leisure travels is excluded from the estimate.

20 United Nations (2010), *International Recommendations for Tourism Statistics 2008,* UN, New York, available online at: https://www.e-unwto.org/doi/epdf/10.18111/9789211615210.

BOX 1.1: **CLASSIFICATION OF MOUNTAINS ACCORDING TO THE UNITED NATIONS ENVIRONMENT PROGRAMME WORLD CONSERVATION MONITORING CENTRE**

The classification adopted by the United Nations Environment Programme World Conservation Monitoring Centre's (UNEP-WCMC) to establish categories for mountains was the basis for a global framework to elaborate comparable statistics around the globe. The classification defines seven types of mountains considering mountain altitude, local elevation range, and slope:

Class 1: elevation > 4,500 m

Class 2: elevation 3,500 – 4,500 m

Class 3: elevation 2,500 – 3,500 m

Class 4: elevation 1,500 – 2,500 m and slope ≥ 2°

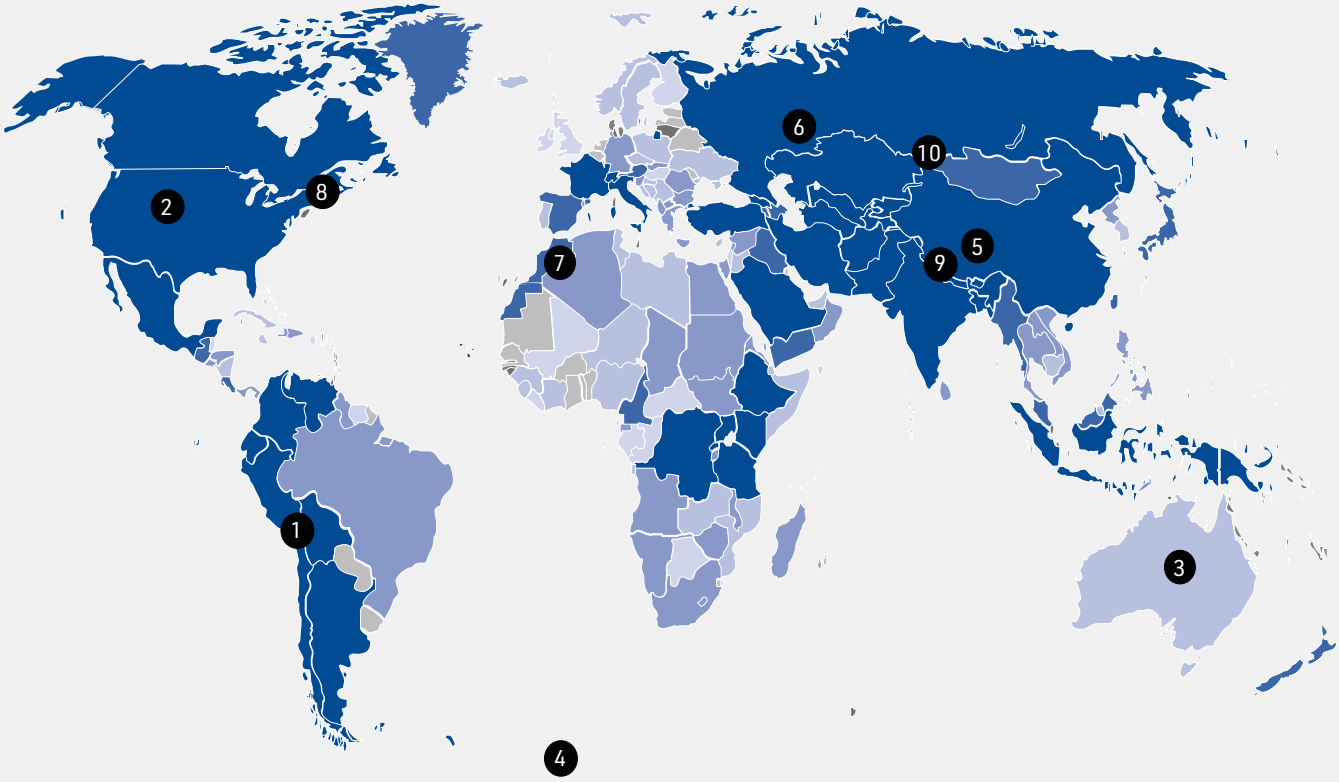
Class 5: elevation 1,000 – 1,500 m and slope ≥ 5° or local elevation range [7 km radius] > 300 m

Class 6: elevation 300 – 1,000 m and local elevation range [7 km radius] > 300 m

Class 7: isolated inner basins and plateaus less than 25 km^2 in extent that are surrounded by mountains but do not themselves meet criteria of classes 1–6

Note: For the purpose of this report only countries classified in categories 1 to 5 were considered.

Figure 1.1: Classification of countries based on mountain peak altitudes and main mountain ranges



Classification of mountains

- **Class 1:** elevation > 4,500 m
- **Class 2:** elevation 3,500 – 4,500 m
- **Class 3:** elevation 2,500 – 3,500 m
- **Class 4:** elevation 1,500 – 2,500 m and slope ≥ 2°
- **Class 5:** elevation 1,000 – 1,500 m and slope ≥ 5° or local elevation range [7 km radius] > 300 m
- **Class 6 and 7:** elevation 300 – 1,000 m and local elevation range > 300 m
- Not classified

Main mountain ranges (length)

1.	Andes	7,000 km
2.	Rocky Mountains	4,830 km
3.	Great Dividing Range	3,700 km
4.	Transantarctic Mountains	3,500 km
5.	Kunlun Mountains	3,000 km
6.	Ural Mountains	2,640 km
7.	Atlas Mountains	2,500 km
8.	Appalachian Mountains	2,400 km
9.	Himalayas	2,300 km
10.	Altai Mountains	2,000 km

Note: Based on above mentioned UNEP-WCMC classification.

Sources: Kapos, V. et al. (2000), 'Developing a map of the world's mountain forests', in: Price, M.F. and Butt, N. (eds.) (2000), *Forests in sustainable mountain development: a state of knowledge report for 2000,* CAB International, Wallingford, pp. 4–19, DOI: https://doi.org/10.1079/9780851994468.0004.

Data from CIA World Factbook (https://www.cia.gov/the-world-factbook/field/area-rankings/).

1.2.4 ONLINE SURVEY

An online survey was conducted between July and December 2022 among the national tourism administrations (NTAs) of the 160 UNWTO member states (see questionnaire in Annex I). A total of 46 countries responded to the online survey, 42 of which are part of the 150 countries identified as relevant for the purpose of this study.

The survey provided first-hand knowledge and available data on mountain tourism, as well as its estimated volume, by respondents. It also facilitated the compilation of additional evidence and reports.

Data provided by respondents on the estimated share of mountain tourism of their total number of international tourism was used as a reference when assessing countries with similar characteristics (e.g., common source markets, sharing a relevant mountain range, etc.)

Mountain tourism can be associated with many different activities (e.g., skiing, walking, hiking, active tourism, nature tourism, sports tourism, cultural and heritage tourism, etc.). Therefore, the predominant activities related to tourism in mountains identified in the survey were used as focus areas for the quantification of visitors. 'Walking', 'hiking', 'adventure tourism' and 'winter sports' were the main mountain-related activities identified by respondents.

The countries surveyed were asked to indicate the estimated share of mountain tourism in their total number of international tourist arrivals (32 responses were obtained out of the 46 countries). The market share provided was supported by statistical data, reports and/or surveys, as it was generally not possible to obtain exact figures but rather estimates from secondary data.

Based on the survey answers and the desk research, it can be established that national data on mountain tourism is not standardized. Depending on the country, it can include:

- **Data on overnight stays and number of beds across all accommodation types** in mountain areas;
- **Data on visitors to national parks** based on (1) entry fees to access and/or spend the night on park premises; (2) the number of visitors to visitor centres; and/or (3) automated door counters;
- **Data on ski resorts** including the combined number of ski passes sold across all ski resorts; and/or
- **Data on visitors to attractions and landmarks** managed by public authorities or under concession by private companies (e.g., caves, viewpoints, waterfalls, canyons, peaks).

1.2.5 DESK RESEARCH AND REVIEW OF AVAILABLE INFORMATION

The desk research gathered further insights into mountain tourism to complement the survey data and fill in the information gaps for relevant countries that did not respond to the survey.

The research focussed on market studies from mountain destinations, customer segment reports from mountain related activities, annual reports from national park administrations, ski resorts management companies and regional tourism boards, among others. The documentation provided specific indicators for the statistical review, such as market sizes, participation rates in selected activities, visitor figures from specific time ranges, etc.

To ensure consistency, the consolidation of all available data was done considering its origin when possible (i.e., international and/or domestic), and differentiating among visitors ('same-day' *and* 'overnight' visitors) and tourists (only 'overnight visitor').

The study uses the pre-pandemic year of 2019 as its benchmark. While tourism data is compiled on a regular basis by UNWTO, data from national parks administrations, ski resort management companies, regional tourism boards or reports on mountain tourism was limited or not available for 2019. In this case, an estimate for 2019 was calculated based on tourism performance and growth rates of the countries for the last 10 to 20 years.

IN SUMMARY, THE MARKET SHARE FOR MOUNTAIN TOURISM FOR THE REFERENCE YEAR 2019 HAS BEEN ESTIMATED BASED ON:

1. **Survey responses from UNWTO member states** on the estimated share of mountain tourism within their international tourism, as well as additional information provided, such as specific data on international arrivals in mountain destinations or some on overnight stays; and

2. **Existing data on international tourism** considering:
   - 'Leisure tourism' as a share of all international tourist arrivals (about 55% of international tourist arrivals worldwide): the share of tourists travelling for leisure purposes as reported by countries narrows down the potential market, discarding non leisure motivations;
   - The analysis of detailed data at destination or local level, whenever available for mountain areas (e.g., mountain resorts, villages in mountain areas, etc.); and
   - The existence of relevant national parks, mountain ranges and/or peaks in the country, that are known at international and/or domestic level, to validate the relevance within the leisure market size.

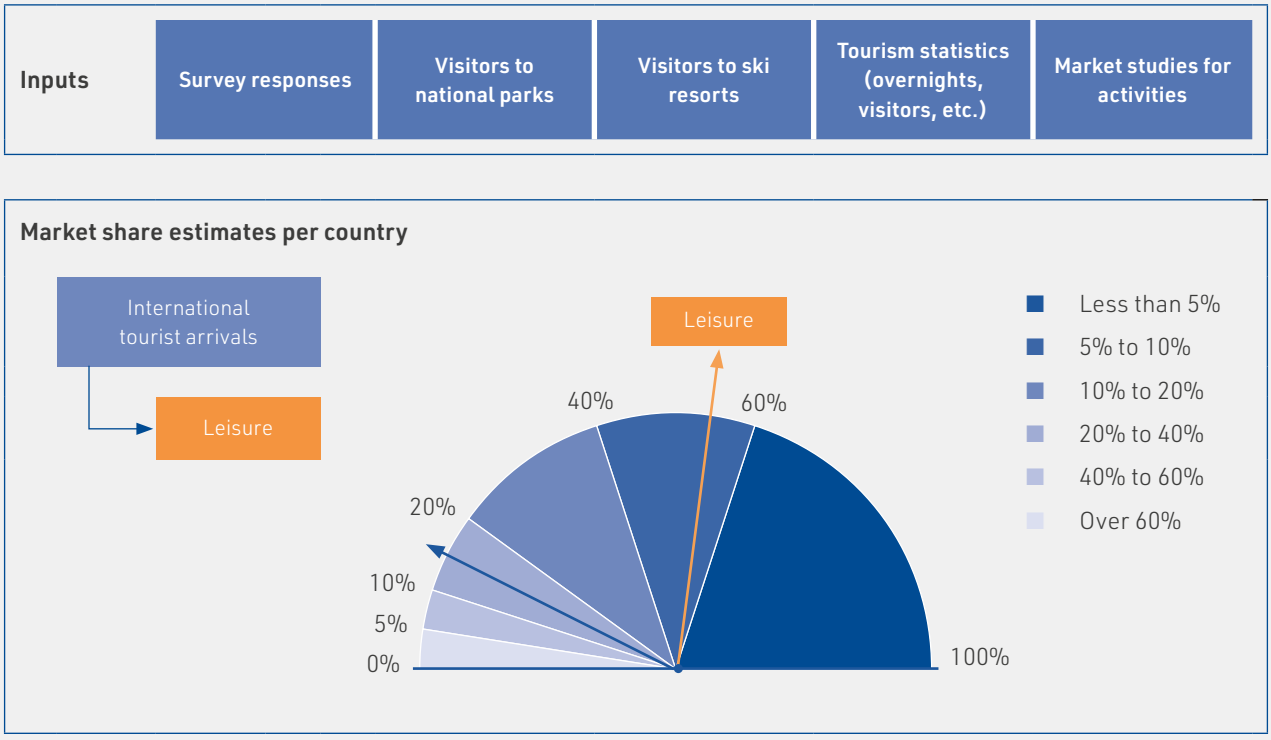
Note: The volume of visitors to mountainous national parks, ski resorts and mountain landmarks has been considered as the basis for mountain tourism measurement in countries with no detailed data by administrative divisions or at the destination level. For these sources, data has been reviewed based on whether visitors are international and/or domestic for consistency purposes. However, data on visitors to national parks may have limitations as they are not exhaustive, do not incorporate the average length of stay, or make a distinction between repeated day visits.
Data from national parks and reserves not located in mountains have not been considered (i.e., especially for forests, coastal areas, and game reserves).

1.3 PROPOSED RANGES FOR MEASURING THE SHARE OF MOUNTAIN TOURISM IN INTERNATIONAL TOURIST ARRIVALS

Based on the methodology, international mountain tourism estimates were grouped as follows:

- **Not applicable:** for countries without relevant mountains (i.e., not included in categories 1 to 5 presented above);
- **Less than 5%:** where mountain tourism exists but is almost residual due to the limited number of peaks and mountain ranges, or being in the early stages of development;
- **5% to 10%, 10% to 20%,** and **20% to 40%:** where mountain tourism is among the motivations for visiting the destination but ranking below the main one (usually coastal tourism); and
- **40% to 60%** and **over 60%:** where mountain tourism is the main motivation for visiting a destination (i.e., considering that the share of leisure tourism represents around 55% of international tourism, no other motivation can rank higher for these countries)

Figure 1.2: Proposed ranges for mountain tourism quantification



02 ANALYSING AND UNDERSTANDING MOUNTAIN TOURISM

KEY MESSAGES:

- The 150 countries identified as mountain destinations as per the existence of mountains account for 87% of international tourist arrivals;
- Countries with high elevations can be considered as mountain destinations with a relevant share of mountain tourism. However, there is not always a causality between tourism and geography, and the general appeal of mountains does not necessarily translate into a high level of mountain tourism development;
- To estimate the size of mountain tourism, it is important to understand what motivates visits to mountains. According to survey results, 'walking and hiking' followed by 'nature tourism' and 'rural tourism' are the predominant activities in mountain destinations; and
- Assessing the volume of visitors to natural parks and protected areas, as well as to ski areas, can also contribute to the estimation of the size of mountain tourism, in view of the limited data available.

2.1 MOUNTAIN COUNTRIES AS MOUNTAIN TOURISM DESTINATIONS

The 150 countries identified as mountain destinations as per the existence of mountains account for 87% of international tourist arrivals.

Several countries with high elevations (some of which are landlocked) can be considered 'pure mountain tourism destinations' , as mountains are the main driver or attraction for tourism demand.

Some examples:

- **Nepal** is considered the world's premier destination for trekking and where commercial trekking was pioneered in the early 1960s when Colonel Jimmy Roberts organized the first commercial trek.[21] With eight of the world's highest mountains, Nepal is a mountaineer's paradise.
- **Andorra** is a small destination of 468 km^2, of which 92% are mountains and forests. Nature within reach and easy access is the main offering, making it a paradise for nature lovers – and 'nature' is the main travel motivation among its visitors. According to Govern d'Andorra, the destination welcomed 8.4 million international visitors (out of which 3 million overnight visitors) in 2022. Andorra offers 303 km of ski slopes, protected natural areas and the Biosphere Reserve in Ordino.[22]
- Two thirds of the surface of **Austria** are covered by the Alps. Therefore, most of its villages and cities can be considered as mountain tourism destinations with various forms of mountain tourism products and services – all year round. In terms of quantitative importance, 53% of overnight stays in Austria are registered in federal provinces in the Alpine region (Tyrol 33% and Salzburg 20%, as per 2019 figures).[23]

21 Nepal Tourism Board (n.d.), 'Trekking in Nepal', online available at: https://ntb.gov.np/en/things-to-do/trekking [25-11-2022].

22 Visit Andorra (n.d.), https://visitandorra.com/.
Visit Andorra (n.d.), 'Lo más básico de Andorra', available online at:
https://visitandorra.com/es/informacion-para-el-visitante/el-pais/lo-mas-basico-de-andorra/ [17-03-2023].

23 Federal Ministry Republic of Austria – Labour and Economy (n.d.), https://www.bmaw.gv.at/en.html [15-03-2023].

Table 2.1: Top 10 most mountainous countries

By average height above sea level		
1.	Bhutan	3,280 m
2.	Nepal	3,265 m
3.	Tajikistan	3.186 m
4.	Kyrgyzstan	2,988 m
5.	Lesotho	2,161 m
6.	Andorra	1,996 m
7.	Afghanistan	1,885 m
8.	Chile	1,871 m
9.	China	1,840 m
10.	Armenia	1,792 m

By % area covered in mountains		
1.	Bhutan	98.8%
2.	Tajikistan	91.9%
3.	Kyrgyzstan	90.7%
4.	Lesotho	90.5%
5.	Montenegro	89.3%
6.	Armenia	85.9%
7.	North Macedonia	85.5%
8.	Switzerland	83.6%
9.	Lebanon	81.1%
10.	Nepal	80.7%

Source: Word Population Review (2023), *Most montainous countries,* available online at: https://worldpopulationreview.com/country-rankings/most-mountainous-countries [17-03-2023].

There is not always a causality between tourism and geography, however. The theoretical appeal of mountains does not necessarily translate into a high level of mountain tourism development in practice:

- The ten most mountainous countries by average height above sea level **received 190 million international tourists** in 2019, or 8% of international tourist arrivals worldwide.

- The ten most mountainous countries by percentage area covered by mountains **received 31 million international tourists** in 2019, which is less than 1% of all tourists.

In fact, some mountainous countries are still in a development process and currently more appealing to experienced mountaineers than to international visitors at large. Therefore, to increase the development of mountain tourism, countries should make efforts to ensure mountainous regions are accessible to a wider audience and develop tourism activities that do not need specific skillsets ('standard' activities, as detailed in table 2.2), while – at the same time – creating sustainable tourism products that involve the participation of local communities. Branding and marketing are also pending exercises in countries with an important potential for the development of mountain tourism, but where mountains are not well-known at the international level or where coastal and lowlands assets are more established.

2.2 MOTIVATIONS FOR VISITING MOUNTAINS

Data from the UNWTO *Compendium of Tourism Statistics,*[24] which includes data for 201 countries and territories, shows that among the over 170 countries reporting data on international tourist arrivals (inbound tourism), 143 provide data on 'purpose of visit' (over 70% coverage). In 2019, the share of 'leisure' as purpose of visit accounted for 55% of all international tourist arrivals.

Country data on domestic tourism is limited compared to inbound tourism, with less than 80 countries[25] providing data on domestic trips, guests or nights, and only 58 providing the breakdown by purpose of visit. Furthermore, data on domestic trips often does not differentiate between 'overnight' and 'same-day' visitors.

Mountain destinations offer many activities, and their categorization into 'standard' or 'extreme' provides a framework to assess market sizes and to measure participation rates through available market studies.

The survey among UNWTO members[26] indicates that 'standard' leisure activities are the predominant ones developed in mountains.

Table 2.2: Types of activities related to mountain tourism

Standard activities (soft)	Extreme activities (hard)
Agritourism/rural tourism	Alpinism
Camping	Canoeing
Cultural and heritage discovery	Canyoning
Cycling	Caving
Fishing/hunting	Climbing
Gastronomy	Jumping
Horseback riding	Mountain biking
Touring/sightseeing	Paragliding
Walking/hiking	Trail running
Wildlife observation/birdwatching	Trekking
Winter sports (e.g., skiing)	Winter sports (e.g., ski mountaineering)

Note: Refer to Annex I: Survey for detailed responses.

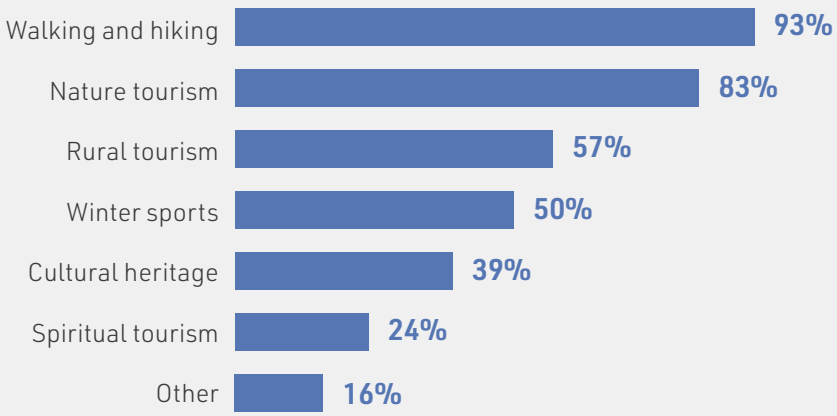
Source: Adapted from Adventure Travel Trade Association (2013), *Adventure Tourism Market Study 2013,* ATTA, available online at: https://learn.adventuretravel.biz/research/adventure-tourism-market-study-2013 [24-11-2022]

24 World Tourism Organization (2022/b), *Compendium of Tourism Statistics, Data 2016–2020, 2022 Edition,* UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284423583.

25 World Tourism Organization (2020/c), *UNWTO Briefing Note – Tourism and COVID-19, Issue 3. Understanding Domestic Tourism and Seizing its Opportunities,* UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284422111.

26 Refer to Annex I: Survey for detailed responses.

Figure 2.1: Predominant activities related to mountain tourism – survey results, 2022



Note: Multiple answers were possible.
Source: Survey of UNWTO member states for the purpose of this study, n = 46.

According to the results, 'walking and hiking' followed by 'nature tourism' and 'rural tourism' are the main activities in mountains. 'Winter sports' is also relevant, but to a comparatively lesser extent, as not all mountain destinations are suitable for winter sport activities. Activities related to 'cultural heritage', 'spiritual tourism' and 'adventure tourism', as well as 'birdwatching' were also mentioned by some respondents.

Several NTAs, tourism research centers, sports associations and environmental entities regularly launch specific surveys aimed at identifying demand trends and establishing a market size which can help provide an estimate for international and domestic mountain tourism.

Statistics directly related to these activities and provided by some of the countries completing the survey have helped to further estimate the share range for the quantification stage. For example:

- In **Brazil,**[27] 18.6% of international tourists are motivated by nature, ecotourism, and adventure for their leisure trips.
  - **Mountain tourism represents between 10% and 20%** as per the survey results.
- In **Peru,** PROMPERÚ reported that in 2019, 78% of all international tourists did a hiking or trekking activity during their trip.[28]
  - **Mountain tourism represents over 60%** as per the survey results.
- The regular 'T-Mona' survey[29] among guests in **Austria** shows that in 2019, 'hiking/climbing' in summer and 'winter sport' in winter were the strongest motives of travel, reaching 43% and 61% respectively. In the summer of 2019, 42% of guests quoted 'mountains' as the leading motive for going on holidays followed by 'landscape/nature' (30%), offer of hiking trails (29%) and lakes/rivers (24%).
  - **Mountain tourism represents over 60%** as per the survey.
- In **Spain,** data by Turespaña (based on the tourism expenditure survey EGATUR and microdata by the Spanish Statistical Office – INE) shows that 3.4 million international tourists (4.1% of total) in 2019 were motivated by winter sports, trekking and hiking.
  - **Mountain tourism represents at least 5%** as per the survey response.

27 Ministério do Turismo do Brazil (2019), *Estudo da Demanda Turística Internacional, Brasil – 2019,* Ministério do Turismo do Brazil, Brasilia, available online at: https://www.gov.br/turismo/pt-br/acesso-a-informacao/acoes-e-programas/observatorio/demanda-turistica/demanda-turistica-internacional-1 [25-11-2022].

28 Comisión de Promoción del Perú para la Exportación y el Turismo – PROMPERÚ (n.d.), 'Biblioteca de reportes – Turista extranjero', available online at: https://www.promperu.gob.pe/TurismoIN/sitio/ReporteTuristaExtranjero [15-03-2023].

29 Federal Ministry Republic of Austria – Agriculture, Forestry, Regions and Water Management (n.d.), *Tourism Statistics – National Data,* available online at: https://info.bml.gv.at/en/topics/tourism/tourism-statistics/national-data.html [15-03-2023].

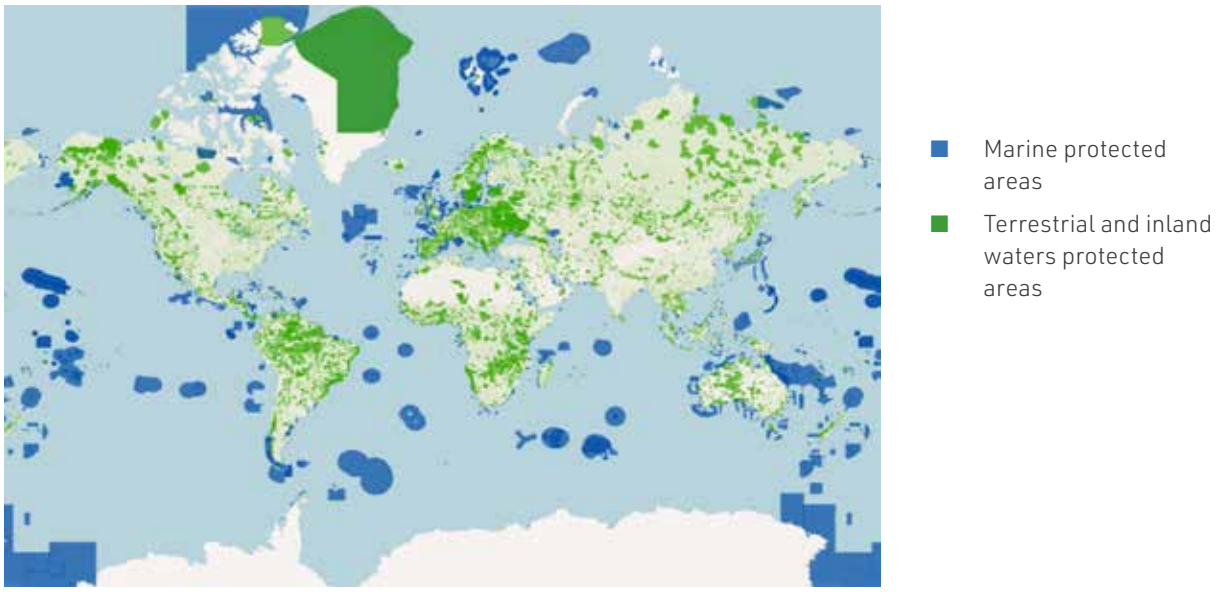
2.3 VISITORS TO NATIONAL PARKS AND PROTECTED AREAS

The combination of their geographical features, unique biodiversity and often well-preserved state has made mountains popular nature tourism destinations. Often mountains are within national parks and protected areas. The World Database on Protected Areas project of the UNEP-WCMC and the International Union for Conservation of Nature lists some 270,000 ha of protected areas, covering 16% of the earth's surface.[30]

The need to monitor tourism flows and carrying capacity are key issues for protected natural areas. Careful management of visitor flows in such sensitive environments is achieved by monitoring the number of visitors via entry fees, automatic counters and ad-hoc surveys, among other methods.

The above mentioned methods enable many national park authorities to directly collect reliable data, most of which is published in their yearly financial reports. It is important to note, however, that such data comes with several caveats. It is not standardized among countries and often does not differentiate between domestic and international visitors. Considering the universal access to mountains, only counting visitors at main entry points

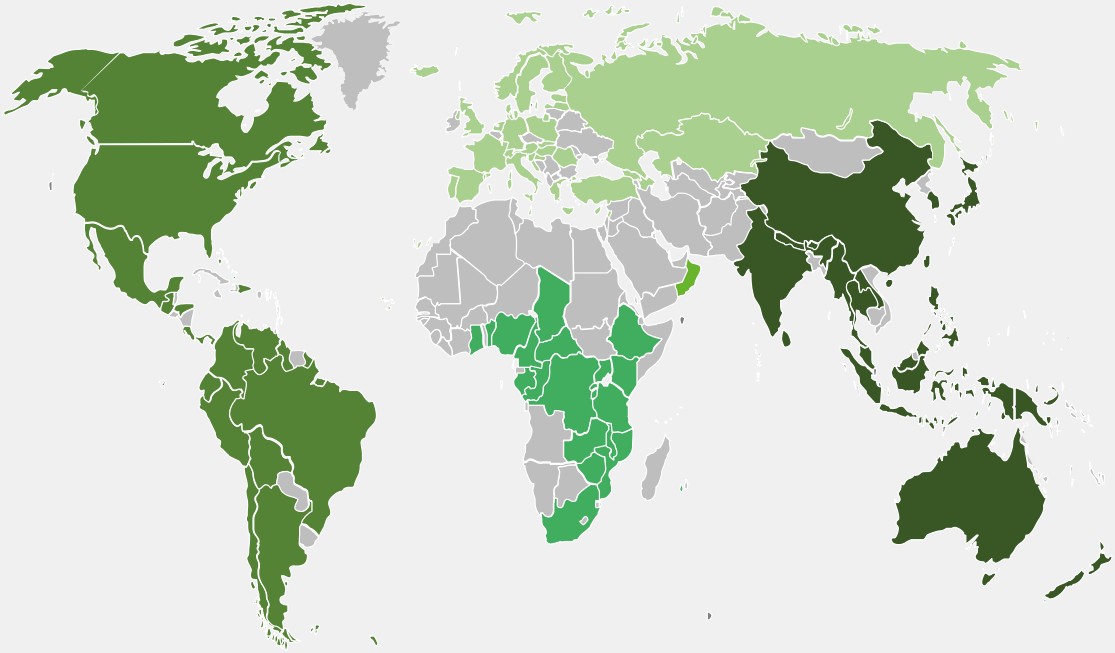
Figure 2.2: Protected areas of the world, 2022



Source: United Nations Environment Programme World Conservation Monitoring Centre and International Union for Conservation of Nature (2023), 'Protected Planet: The World Database on Protected Areas (WDPA)', October 2022, online data base, UNEP-WCMC and IUCN, Cambridge, available online at: www.protectedplanet.net [16-01-2023].

30 United Nations Environment Programme World Conservation Monitoring Centre and International Union for Conservation of Nature (2023), 'Protected Planet: The World Database on Protected Areas (WDPA)', October 2022, online data base, UNEP-WCMC and IUCN, Cambridge, available online at: www.protectedplanet.net [16-01-2023].

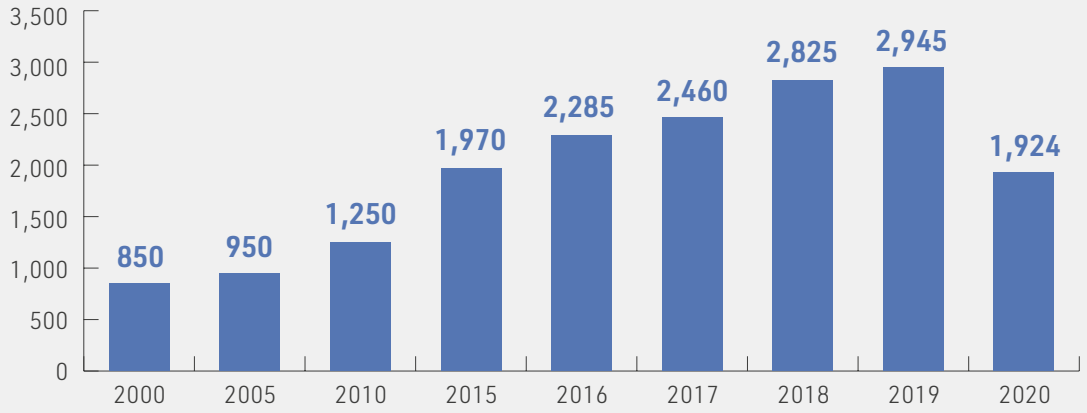
Figure 2.3: Mapping of countries with available information on national parks visitor, by world region.



Note: Different tones of green represent world regions.

Source: Based on annual reports of national park authorities from 94 countries examined for the purpose of this study.

Figure 2.4: Estimated number of visitors to national parks, 2000–2020 (× 1,000)



Note: Aggregates are estimated based on data available.

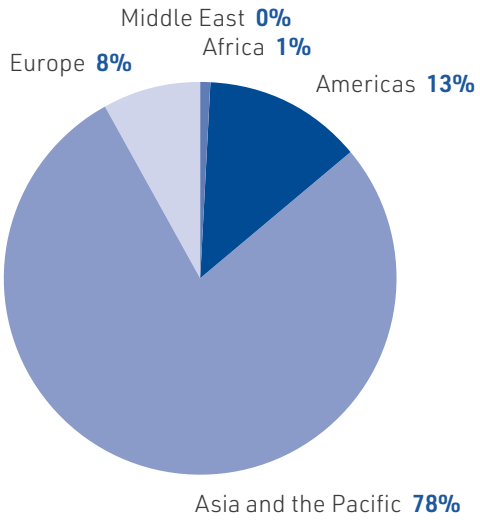
Source: Based on annual reports of national park authorities from 94 countries examined for the purpose of this study.

and during certain times of the year is another limitation. The number of protected areas and the surface area they represent within the country have also been considered to show the representativeness of national parks and guide the projection for overall mountain tourists.

A review of data compiled and aggregated by national park authorities from 94 countries worldwide allowed for an estimation of the number of people engaged in mountain activities such as 'walking and hiking', 'nature tourism' and 'rural tourism':

- Together, the national parks included in the study recorded over 2,950 million visitors in 2019, with Asia and the Pacific accounting for the largest share (78%). China alone welcomed 1,800 million visitors to protected areas;
- Between 2010 and 2018, the number of visitors to national parks has increased between 8% and 10% annually; and
- In 2020 the number of visits to national parks decreased by 35%, substantially less than the decrease in international tourist arrivals worldwide (-72%).

Figure 2.5: Distribution of visitors to national parks by region, 2019



Note: Aggregates are estimated based on data available.
Source: Based on annual reports of national park authorities from 94 countries examined for the purpose of this study.

2.4 VISITORS TO SKI AND MOUNTAIN RESORTS

Mountains do not only offer opportunities for walking and hiking, and for nature and rural tourism, but also for winter sports and establishments such as ski resorts.

Ski resorts are generally situated outside of protected areas. Therefore, no or minimum overlap occurs with data on national parks. Ski resorts in mountains are either public or managed by private entities under a concession, and base their economic activity on ski passes, which are a key indicator for business and statistical purposes.

Globally, there are over 5,700 ski resorts in mountain ranges with cold climates. The *International Report on Snow and Mountain Tourism*[31] analyses the ski industry and covers 60 countries across the five continents. According to the report's global estimates, ski resorts receive between 350 and 380 million annual visits (also referred to as skier days) generated by around 135 million skiers. Thus, the average number of skier days per skier and season is around three. The international flows of skiers are primarily concentrated within Europe, but from a global perspective the share of skiers as part of all international visitors is limited to about 10%.[32]

Table 2.3: Volumes of skiers and skier day distribution among domestic and international skiers

World region	Skiers (millions)	Skier days (millions)	Skier day distribution	
			Domestic (%)	International (%)
Africa	0.31	0.14	93	7
Americas	34	75	92	8
Asia and the Pacific	30	56	92	8
Europe	74	235	65	35
Middle East	0.13	0.3	95	5
World	**135**	**370**	**90**	**10**

Note: Skier visits (or skier-days): One person visiting a ski area for all or any part of a day or night for the purpose of skiing, snowboarding, or other downhill sliding activity. Skier visits include full-day, half-day, night, complimentary, adult, child, season pass and any other type of ticket that gives a skier/snowboarder the use of an area's facilities. A skier skiing for a whole week at a resort accounts for 7 skier visits (for example).

Source: Based on the 60 countries listed in Vanat, L. (2021), *2021 International Report on Snow and Mountain Tourism – Overview of the key industry figures for ski resorts,* 13th edition, Laurent Vanat, Geneva, online available at: https://vanat.ch [25-11-2022].

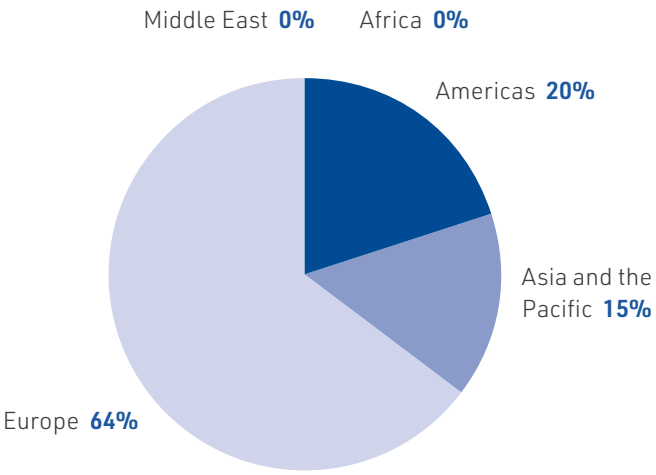
31 Vanat, L. (2021), *2021 International Report on Snow and Mountain Tourism – Overview of the key industry figures for ski resorts,* 13th edition, Laurent Vanat, Geneva, available online at: https://vanat.ch [25-11-2022].

32 Vanat, L. (2021).

Skiing is a seasonal activity lasting up to three to five months per year, although many ski destinations aim to diversify and develop a year-round offer to attract new tourism segments.

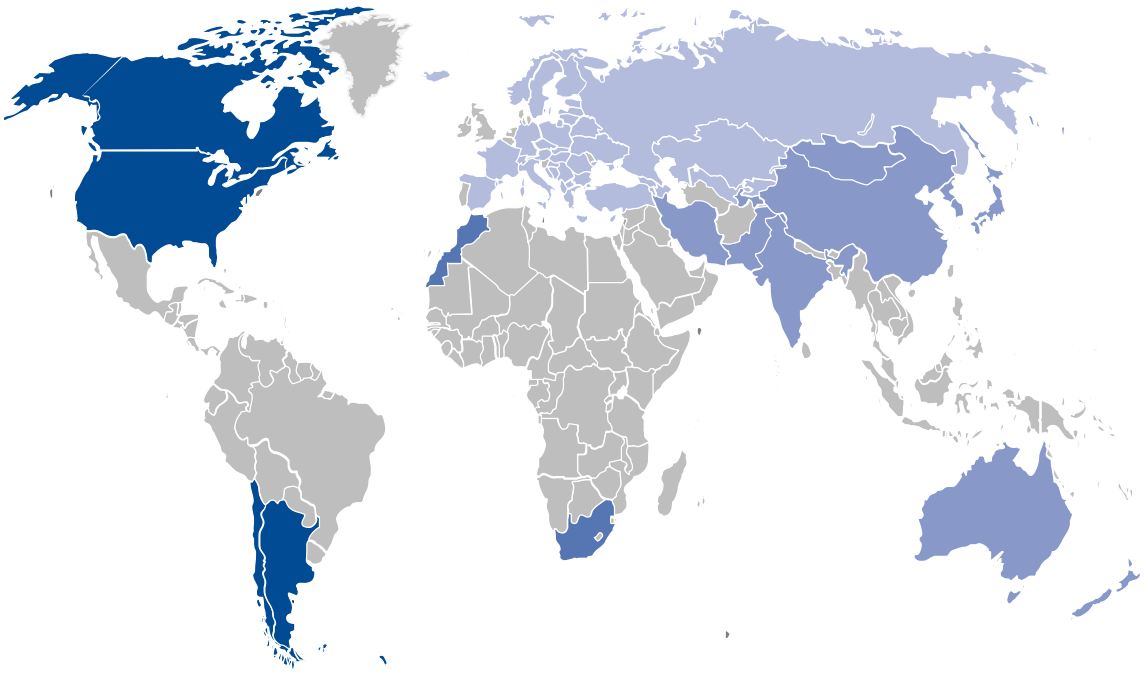
Currently, the most important destinations for skiing are in Europe (235 million skier days) and in the Americas (75 million skier days), showing stable figures over the past years and many with a long tradition of skiing. Other established ski destinations, such as Japan and the Republic of Korea, can be found in Asia and the Pacific region, while emerging destinations in Central Asia and China are slowly increasing their offering by building a skiing culture from scratch. It should be noted, however, that the volume of skier days in Asia and the Pacific is still comparatively small.

Figure 2.6: Distribution of skier days by region, 2019



Source: Based on Vanat, L. (2021).

Figure 2.7: Mapping of countries with ski resorts, by world region, 2019



Note: Different tones of blue represent world regions.
Source: Based on Vanat, L. (2021).

The ski industry is a major economic player in mountain destinations, especially in well-established destinations across North America and Europe. Ski resorts are singular destinations with a seasonal, tourism-oriented economy which makes it relatively easy to measure the sector's impact. The complementary business activities that are generated around ski resorts, such as hotels, shops and other services, provide an important source of income and job creation. Some examples at a national level include:

- According to information provided by the Federal Ministry of Labour and Economy of the Republic of Austria to the survey, **Austria** features 695 mountain peaks higher than 3,000 m, 6 national parks, 48 nature parks, around 600 mountain huts and 64,000 km of hiking trails. According to the Austrian Federal Economic Chamber, the yearly added value generated by users of cable car infrastructure is estimated at around EUR 5.9 billion. In the winter 2019/2020, there were around 47.8 million skier days. Approximately 126.000 jobs are directly or indirectly linked to the cable car industry in Austria.

- **Andorra**'s 303 km of ski slopes generates close to 2.5 million skier days yearly. The economic impact of skiing in the country is around EUR 420 million and represents 17% of the country's GDP (2017)[33].

33 Ordino Arcalis (n.d.), 'Grandvalira Resorts Andorra', available online at: https://www.ordinoarcalis.com/grandvalira-resorts-andorra [17-03-2023].

03 ESTIMATES OF GLOBAL AND REGIONAL SHARES OF MOUNTAIN TOURISM

KEY MESSAGES:

- International mountain tourism is estimated to represent between 9% and 16% of international tourist arrivals worldwide, or between 195 million and 375 million tourists based on 2019 figures.
- The range shows differences between countries. In countries where mountain tourism is a primary motivation for visiting and there is a large tourism concentration and specialized product offer, mountain tourism's share of total international tourism is higher. In other destinations, despite having significant mountain ranges, the share of mountain tourism vis-à-vis total international tourism is smaller due to a more diversified tourism offer, mountain tourism being in an early stage of development, or a higher weight of domestic demand.
- By region, estimates indicate that mountain tourism in Europe and the Americas represents 9%–17% of international tourism, with Asia and the Pacific close behind at 8%–17%. In comparison, Africa and the Middle East show a lower share of 6%–11% and 2%–5%, respectively.
- Only a few countries, such as Italy, Montenegro, Slovenia and Switzerland, have established a specific category for mountain tourism in their statistics (although the definition varies between countries).

3.1 ESTIMATING THE SHARE OF MOUNTAIN TOURISM IN INTERNATIONAL TOURISM

Based on the methodology described in previous chapters, international mountain tourism is estimated to represent between 9% and 16% of international tourist arrivals worldwide, or between 195 million and 375 million tourists, based on 2019 figures.

The table below classifies the 32 countries (among the 46 survey respondents) that gave an assessment of the proportion of mountain tourism within their international tourism. Together, they account for over 40% of international tourist arrivals.

Table 3.1: Countries grouped by the estimated share of mountain tourism in international tourist arrivals, 2019

Less than 5%	5% to 10%	10% to 20%	20% to 40%	40% to 60%	More than 60%
El Salvador	Italy[a]	Armenia	Chile	Andorra	Austria
Fiji	South Africa	Brazil	China	Nicaragua	Lesotho
Israel	Spain	Bulgaria	Ethiopia	Switzerland	Peru
Japan	Uganda	Czech Republic	Nepal		
Korea, Republic of	Türkiye	Ecuador	Slovenia		
Mauritius		Finland	Venezuela		
Montenegro		Romania			
Timor-Leste					

Notes: Grouping of countries based on their estimated share of mountain tourism in international tourism according to the results of the survey of UNWTO member states for the purpose of this study, n = 46.
a) Figure for Italy include both international and domestic arrivals.

The range shows differences between countries. In countries where mountain tourism is a primary motivation for visiting and there is a large tourism concentration and specialized product offer, mountain tourism's share of total international tourism is higher. In other destinations, despite having significant mountain ranges, the share of mountain tourism vis-à-vis total international tourism is smaller due to a more diversified tourism offer, mountain tourism being in an early stage of development, or a higher weight of domestic demand.

By region, estimates indicate that mountain tourism in Europe and the Americas represents 9%–17% of international tourism, with Asia and the Pacific just behind at 8%–17%. In comparison, Africa and the Middle East show a lower share of 6%–11% and 2%–5%, respectively:

- In Europe, the Alps are the main mountain range, covering several Western European countries (Austria, Germany, France, Italy and Switzerland) and appealing to a considerable volume of international tourists;
- In the Americas, the United States of America and Canada are well positioned, all-year-round mountain destinations, but with a limited relevance for international tourism compared to domestic. The Andes, stretching across Argentina, Bolivia, Chile, Ecuador and Peru, are an attractive destination in South America;
- In Asia and the Pacific, the Himalayas are the most relevant mountain range together with the surrounding ranges that offer a competitive product, yet to be developed; and
- In comparison, Africa and the Middle East are regions with less relevant mountain ranges and are currently not positioned as mountain destinations.

Table 3.2: Estimated share of mountain tourism in international tourist arrivals by region (based on 2019 data)

World (sub)region	Lower range (million)	Higher range (million)	Lower range (share, %)	Higher range (share, %)
Global	**195**	**375**	**9**	**16**
Africa	**4**	**8**	**6**	**11**
North Africa	1	2	4	8
Sub-Saharan Africa	3	6	7	13
Americas	**35**	**70**	**9**	**17**
Caribbean	1	2	2	4
Central America	3	5	17	28
North America	24	49	8	17
South America	7	12	18	30
Asia and the Pacific	**45**	**90**	**8**	**17**
North-East Asia	37	74	12	23
Oceania	1	2	7	14
South Asia	2	4	6	12
South-East Asia	5	10	2	5
Europe	**112**	**205**	**9**	**17**
Central/Eastern Europe	20	40	6	13
Northern Europe	4	8	4	7
Southern/Mediterranean Europe	36	70	8	16
Western Europe	52	87	16	26
Middle East	**2**	**5**	**2**	**5**

Note: Consult the subregions and the countries that comprise each region for the purpose of this publication at: World Tourism Organization (2022/b), Compendium of Tourism Statistics, Data 2016–2020, 2022 Edition, UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284423583.

3.2 MOUNTAIN TOURISM IN DOMESTIC TOURISM

According to UNWTO, domestic tourism is six times the size of international tourism.[34] An estimated 9 billion domestic tourist trips (overnight visitors) were recorded around the world in 2018, out of which well over 50% took place in Asia and the Pacific. The world's largest domestic tourism markets in terms of tourist trips are India, China, and the United States of America, mostly the result of their large populations and geographical size.

Assessing the volume and the share of mountain tourism in domestic tourism has several limitations considering that:

- Less than 80 countries provide data to UNWTO on domestic visitors, guests and/ or overnight tourists.
- There is a lack of information on travel motivation for domestic tourism: among the 80 countries reporting data on domestic tourism only 58 provide a breakdown by purpose of visit.
- While the available data from ski resorts is broken down by international and domestic visitors, it is only one of many potential activities in mountain areas. Given the seasonal nature of skiing, this data is not sufficiently representative to assess an overall size.
- The available data from national parks is not consistently provided for both international and domestic visitors. In some countries the volume of domestic visits is not as relevant as international and vice versa. Therefore, the availability of this data does not correspond to its representativeness.

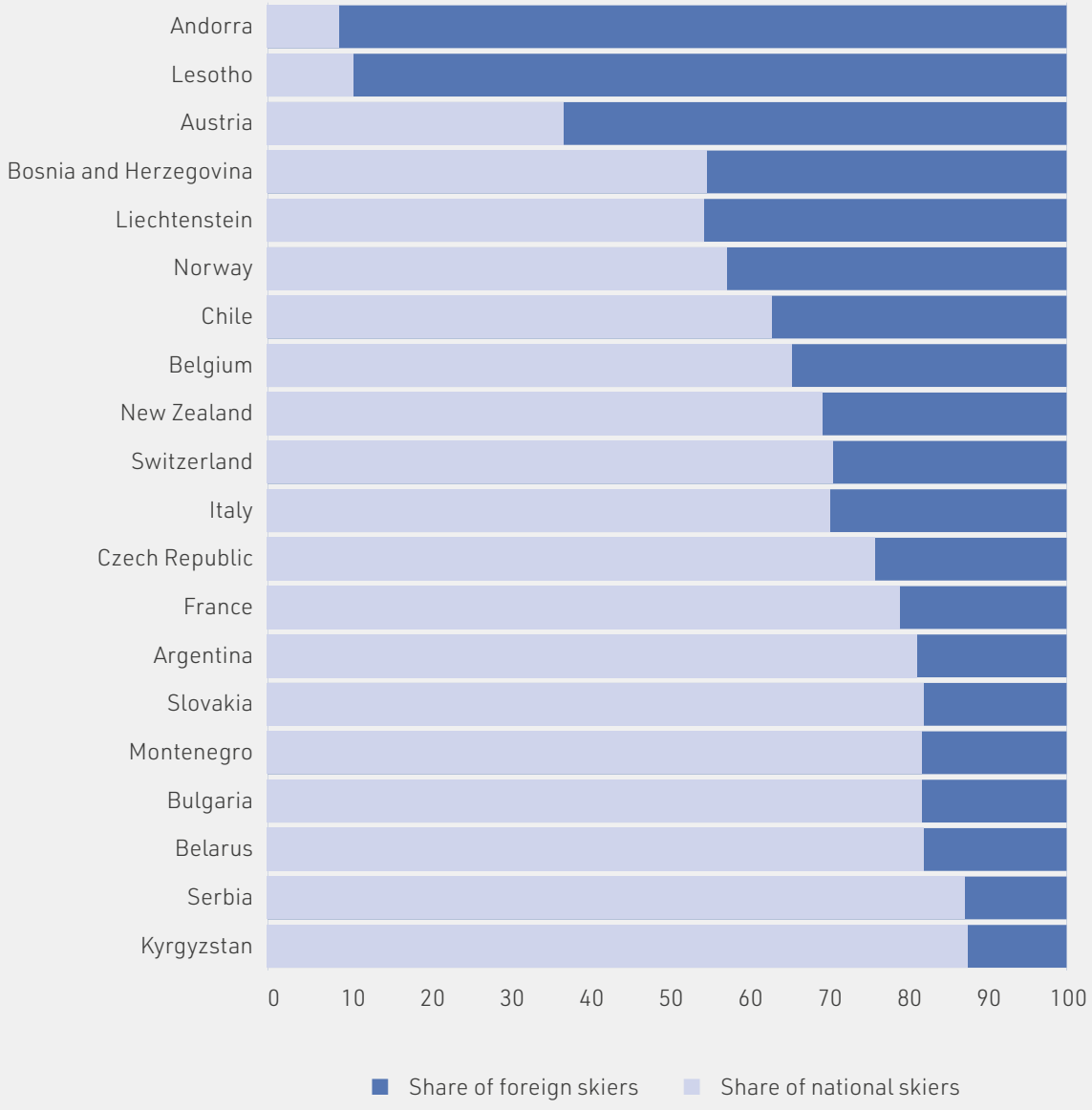
Consequently, assessing the volume and share of mountain tourism at a domestic level cannot be done with the same approach as for international tourism.

As a reference, the share of domestic and international skiers for countries with available data as per the 2022 International Report on Snow and Mountain Tourism[35], is included below.

34 World Tourism Organization (2020/c), *UNWTO Briefing Note – Tourism and COVID-19, Issue 3. Understanding Domestic Tourism and Seizing its Opportunities,* UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284422111.

35 Vanat, L. (2022), *2022 International Report on Snow and Mountain Tourism – Overview of the key industry figures for ski resorts;* Laurent Vanat, available online at: https://www.vanat.ch [16-01-2023].

Figure 3.1: Share of national and foreign skiers in selected countries, 2021 (%)



Source: Vanat, L. (2022), *2022 International Report on Snow and Mountain Tourism – Overview of the key industry figures for ski resorts;* Laurent Vanat, available online at: https://www.vanat.ch [16-01-2023].

3.3 COUNTRY EXAMPLES ON INTERNATIONAL AND DOMESTIC TOURISM DATA COLLECTION

Only a few countries, such as Italy, Montenegro, Slovenia and Switzerland, have established a specific category for mountain tourism in their statistics (although the definition varies between countries). The official statistics provide data on overnight visitors and overnight stays in mountain regions/resorts/destinations for both international and/or domestic tourism.

In **Italy,** available data, which is limited to 2010–2014 and includes both international and domestic demand, shows that mountain tourism accounted for around 12%–13% to all tourism demand in terms of overnight stays and 10% in terms of the number of tourists.

Table 3.3: Data on mountain tourists and overnight stays for international and domestic markets – Italy, 2010–2014

	2010	2011	2012	2013	2014
Total tourists in Italy (million)	**98.8**	**103.7**	**103.7**	**103.9**	**106.6**
Tourists in mountain destinations	10.2	10.5	10.6	10.6	10.6
Share of tourists in mountain destinations (%)	10.3	10.1	10.2	10.2	10.0
Total overnight stays in Italy (million)	**375.5**	**386.9**	**380.7**	**376.8**	**377.8**
Overnight stays in mountain destinations	48.7	48.8	47.9	47.3	46.4
Share of overnight stays in mountain destinations (%)	13.0	12.6	12.6	12.6	12.3

Note: Statistical Office of Italy – Istituto Nazionale di Statistica (ISTAT).

In **Montenegro,** mountain resorts can be found in the municipalities of Kolasin and Žabljak. According to available data, mountain tourism represents 3%–4% of international visitors, 1%–2% of overnight stays and has a short average length of stay of around 2 days, which may indicate that mountain tourism is combined with visits to other parts of the country. At domestic level, the share of mountain tourism rises to 10%–17% of all tourism and shows a higher average length of stay: 4 to 5 days. Nevertheless, the volume of mountain tourism is much higher for international than domestic tourism, reflecting the substantially higher figures for international tourism in the country overall.

Table 3.4: Data on mountain tourists and overnight stays for international and domestic markets – Montenegro, 2015–2019

	2015	2016	2017	2018	2019
International					
Total tourists in Montenegro (× 1,000)	**1,560**	**1,662**	**1,877**	**2,077**	**2,510**
Tourists in mountain resorts	49	56	64	80	99
Share of tourists in mountain resorts (%)	3	3	3	4	4
Total overnight stays in Montenegro (× 1,000)	**10,307**	**10,529**	**11,470**	**12,444**	**13,934**
Overnight stays in mountain resorts	92	107	154	185	225
Share of overnight stays in mountain resorts (%)	1	1	1	1	2
Average length of stay in mountain resorts (days)	1.9	1.9	2.4	2.3	2.3
Domestic					
Total tourists in Montenegro	**153,185**	**151,696**	**122,797**	**128,053**	**135,592**
Tourists in mountain resorts	15,002	16,201	20,282	17,326	14,864
Share of tourists in mountain resorts (%)	10	11	17	14	11
Total overnight stays in Montenegro	**747,576**	**721,530**	**483,184**	**486,524**	**522,382**
Overnight stays in mountain resorts	35,738	36,571	41,306	38,219	33,396
Share of overnight stays in mountain resorts (%)	5	5	9	8	6
Average length of stay in mountain resorts (days)	4.9	4.8	3.9	3.8	3.9

Note: 'Average length of stay' is calculated as 'overnight stays' divided by 'tourists', and 'mountain resorts share' as 'mountain resorts data' over 'total country data'.

Source: Statistical Office of Montenegro (MONTSTAT).

In **Slovenia,**[36] mountain resorts can be found in municipalities located in the Alps (Julijske Alpe, Kamniško-Savinjske Alpe and Karavanke) or in Pohorje. Both domestic and international tourists have a similar average length of stay between 2 and 3 days.

In terms of share, mountain tourism represents around 30%–40% of all international tourists while accounting for around 20%–30% of all domestic tourism demand.

Table 3.5: Data on mountain tourists and overnight stays for international and domestic markets – Slovenia, 2015–2021

	2015	2016	2017	2018	2019	2020	2021
International							
Total tourists in Slovenia (× 1,000)	**3,022**	**3,399**	**3,991**	**4,425**	**4,702**	**1,216**	**1,832**
Tourists in mountain resorts	875	1.014	1.227	1.425	1.519	441	717
Share of tourists in mountain resorts (%)	29	30	31	32	32	36	39
Total overnight stays in Slovenia (× 1,000)	**7,482**	**8,340**	**9,685**	**11,176**	**11,371**	**3,354**	**4,794**
Overnight stays in mountain resorts	2,177	2,516	3,042	3,605	3,743	1,262	1,893
Share of overnight stays in mountain resorts (%)	29	30	31	32	33	38	39
Average length of stay (days)	2.5	2.5	2.5	2.5	2.5	2.9	2.6
Domestic							
Total tourists in Slovenia (× 1,000)	**1,352**	**1,437**	**1,513**	**1,508**	**1,528**	**1,849**	**2,171**
Tourists in mountain resorts	321	341	364	348	358	570	570
Share of tourists in mountain resorts (%)	24	24	24	23	23	31	26
Total overnight stays in Slovenia (× 1,000)	**4,172**	**4,308**	**4,523**	**4,519**	**4,405**	**5,850**	**6,457**
Overnight stays in mountain resorts	804	839	909	883	893	1.575	1.451
Share of overnight stays in mountain resorts (%)	19	19	20	20	20	27	22
Average length of stay (days)	2.5	2.5	2.5	2.5	2.5	2.8	2.5

Note: 'Average length of stay' is calculated as 'tourists' divided by 'overnight stays' and 'mountain resorts share' as 'mountain resorts data' over 'total country data'.

Source: Statistical Office of the Republic of Slovenia.

36 Republic of Slovenia – Statistical Office (2022), *Methodological explanation – Tourist Arrivals and Overnight Stays,* available online at: https://www.stat.si/statweb/File/DocSysFile/8347 [16-01-2023].

Switzerland collects data on international and domestic overnight stays in villages located at 1,000 metres over sea level and above. The number of tourists is not compiled; therefore, it is not possible to determine an average length of stay in the mountains. Available data shows that mountain tourism represents around 30% of all overnight stays in Switzerland for both the international and domestic market.

Table 3.6: Data on mountain tourism overnight stays for international and domestic markets – Switzerland, 2016–2020

	2016	2017	2018	2019	2020
International					
Total overnight stays in Switzerland (million)	**24.0**	**25.6**	**26.8**	**26.9**	**10.3**
Overnight stays in villages >1,000 m	6.8	7.3	7.8	8.0	3.3
Share of overnight stays in mountain villages >1,000 m (%)	28	29	29	30	32
Domestic					
Total overnight stays in Switzerland (million)	**26.3**	**27.8**	**28.6**	**29.4**	**28.3**
Overnight stays in villages >1,000 m	8.2	8.5	8.8	9.0	9.7
Share of overnight stays in mountain villages >1,000 m (%)	31	31	31	31	34

Note: 'Mountain villages >1,000 m share data' over 'total country data'.

Source: State Secretariat for Economic Affairs (SECO), Switzerland.

04 TRENDS, CHALLENGES AND OPPORTUNITIES

KEY MESSAGES:

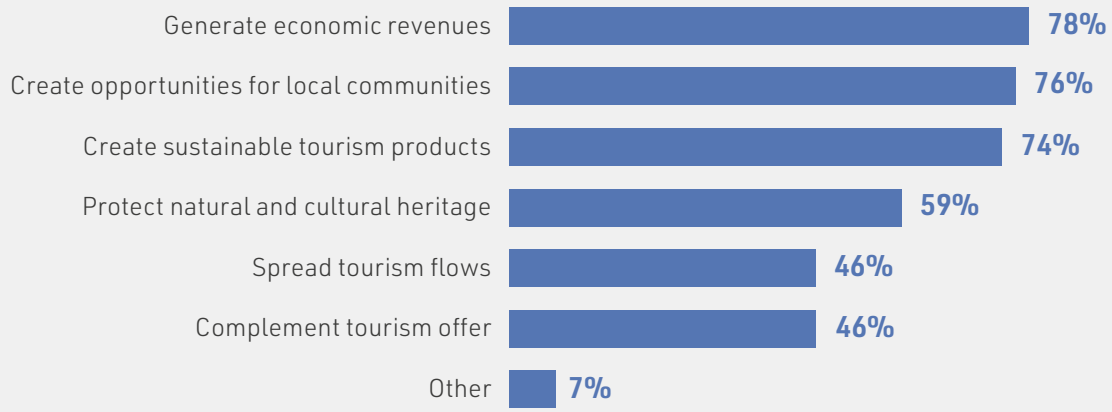
- Lack of data remains a key challenge to properly measure and manage mountain tourism. Most survey respondents underlined the limitation (46%) or total unavailability (40%) of data on mountain tourism.
- There is still potential for many mountain destinations to attract additional tourism, both domestic and international. There is also much room for product development outside peak seasons. Only half (52%) of the countries responding to the survey offer a year-round mountain experience, while 29% indicated winter to be the peak season and 19% said the same for summer destinations.
- Creating opportunities for local communities, generating economic revenue, and developing sustainable products are the main motivations for developing mountain tourism.
- The main challenges associated with mountain tourism are mostly related to inadequate infrastructure and sustainability, followed by product development, connectivity and public-private-community collaboration.

4.1 KEY TRENDS AND CHALLENGES FOR MOUNTAIN TOURISM

This study, and the survey among UNWTO member states in particular, identifies several key mountain tourism trends and challenges, and the vital role improved measurement of this tourism segment can play:

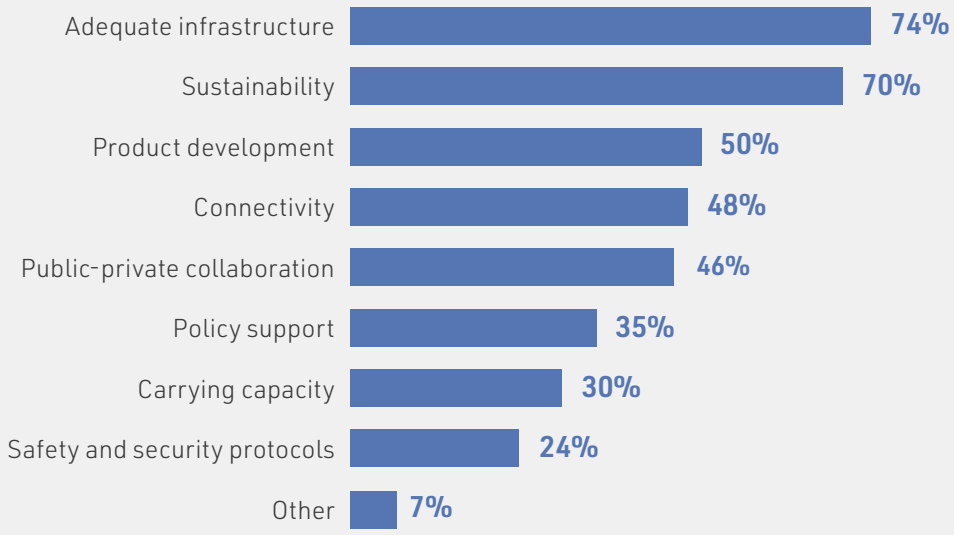
- The lack of data remains a key challenge to properly measure and manage mountain tourism.
- Most survey respondents underline the limitation (46%) or total unavailability (40%) of data on mountain tourism. Timeliness, as well as the lack of disaggregated, granular and standardized data, are crucial obstacles for the adequate measurement of tourism flows in mountains, as is comparability between countries. In addition, many respondents state that indicators on the socioeconomic contribution of mountain tourism (e.g., tourism revenues, average expenditure, tourism employment) are not available.
- According to survey responses (of 100% total), available data is mostly collected from official tourism statistics (47%) and through entrances to parks or natural areas (33%). Around 17% of respondents collect data from surveys and only 3% from mobile data.
- There is still potential for many mountain destinations to attract additional tourism, both domestic and international. The survey results reveal that most destinations (60%) welcome both international and domestic tourists. Around 30% of respondents indicate that visitors are mainly domestic, while only 10% indicate that they are mostly international.
- There is a mix of established and emerging mountain destinations. Around 41% of respondents define their destination as established. Similarly, 41% define themselves as emerging destinations. 7% of the respondents point out that mountain tourism could draw attention in the future. The remaining 11% of respondents see little room for development.
- There is still much potential for product development outside peak seasons in mountains. Only half of the responding countries offer a year-round experience, while 29% indicate winter to be the peak season and 19% say the same for summer. Mountain destinations aim to offer a year-round tourism product, but many are mostly operating as winter destinations as visitors tend to associate them with winter activities.
- According to the survey responses, generating economic revenue, creating opportunities for local communities and developing sustainable products are the main motivations for mountain tourism development. Protecting natural and cultural heritage, spreading tourism flows, complementing the existing tourism offer and addressing seasonality are other motivations mentioned by respondents.
- On the other hand, the main challenges when developing and promoting mountain tourism are mostly related to ensuring adequate infrastructure and sustainability, followed by product development, connectivity and public-private-community collaboration. Other challenges such as policy support, carrying capacity and safety and security protocols or tourism acceptance among residents, were also mentioned by survey respondents.

Figure 4.1: Main purposes of mountain tourism development for national tourism administrations (%)



Source: Responses from survey of UNWTO member states for the purpose of this study, n = 46.

Figure 4.2: Main challenges when developing and promoting mountain tourism for national tourism administrations (%)



Source: Responses from survey of UNWTO member states for the purpose of this study, n = 46.

Based on these insights it is important to:

- **Improve the measurement of tourism flows in mountains** as this will help destinations to set strategies to reduce the strong seasonal demand that characterizes this segment and:
  - **Spread** tourism flows by reducing pressure on popular coastal and urban destinations, as well as diversifying the demand for mountain tourism throughout the year;
  - **Share** the economic benefits of tourism among more territories to reduce regional imbalances and create local employment opportunities for rural and mountain communities; and
  - **Preserve** cultural and natural heritage and protect the authenticity of the destination, if well-managed.
- **Strengthen public-private partnerships and involve local communities to create new tourism products.** Opportunities exist to further develop gastronomy, nature, wellness, handicrafts and rural tourism. This will facilitate a year-round mountain tourism offer and reduce seasonality, which is becoming increasingly important as climate change is altering the seasonal patterns. Many challenges in tourism management stem from the growing demand for nature and outdoor activities. Public and private stakeholders must be truly engaged and committed to a sustainable development of tourism, aligned with the protection of natural and cultural heritage.
- Promote **domestic tourism** in mountains, which has proved to be resilient during the pandemic.
- Provide experiences that **cater** for visitors' needs and adapt to ever-changing consumer trends, including:
  - Seeking a mountain climate with clean air and uncrowded open spaces;
  - Enjoying untouched or well-preserved scenery with unique mountain flora and fauna in protected areas, parks and/or reserves;
  - Experiencing local traditions and cultural heritage with a chance to interact with residents and local small businesses;
  - Engaging in leisure activities (i.e., standard and extreme activities) and sports (e.g., hiking, skiing, mountaineering); and
  - Ensuring the preservation of cultural and natural heritage to safeguard the essence and authenticity of the destination by involving local communities in the planning and development of mountain tourism products.

4.2 MOUNTAIN TOURISM TRENDS DURING COVID-19

In many countries domestic tourism demonstrated more resilience than its international counterpart during the pandemic, mainly due to mobility restrictions (e.g., lockdowns, curfews, closed borders, quarantines, etc.). According to the survey among UNWTO member states for the purpose of this study, tourism in mountains increased in 31 of the 46 responding countries. For instance, data from Austria based on the 'T-Mona' survey shows that in 2019, 'hiking/climbing' (43%) and 'winter sports' (61%) were the strongest motives for visiting in the summer and winter respectively. In 2021 (no data is available for 2020), 'hiking/climbing' became even more prominent with 54% of all respondents citing it as the most important summer holiday motive.

In the Swiss Alps, where international and domestic overnight stays were about the same in 2019 (8 million international vs. 9 million domestic), domestic overnight stays showed resilience throughout the pandemic. According to data provided by SECO, domestic overnight stays increased from 9 million in 2019 to almost 10 million in 2020, while international overnight stays decreased from 8 million in 2019 to some 3 million in 2020.

Mountains that were already local destinations have been rediscovered by domestic tourists since the pandemic. Tourism in rural and mountainous regions experienced robust demand during the crisis, as people sought outdoor activities near their homes after lockdowns, opting for walks and hikes in nearby mountains to avoid densely populated areas.

Table 4.1: Evolution of visitors to national parks and impact caused by COVID-19 (million)

	2018	2019	2020	Change (%) 2020/2019	2021	Change (%) 2021/2019
Argentina	4.0	4.3	1.6	-62	2.0	-53
Brazil	12.4	15.3	8.4	-39	16,7	+9
Chile	3.4	3.5	1.4	-60	1.7	-51
China	1,600	1,800	1,512	-16	2,083	+15
Costa Rica	2.1	2.2	1.1	-48	1.6	-27
Peru	2.4	2.7	0.7	-74	14	-48
Korea, Republic of	43.8	43.2	35.3	-18	35.9	-16
Spain	15.2	14.4	9.3	-37	11.9	-17
Türkiye	35.3	51.8	32.8	-37	41.4	-20
United States of America	318	327	237	-28	297	-9

Source: National park authorities in selected countries with data available.

European mountain tourism experienced a boom during the summer seasons in 2020 and 2021, in contrast to a critical decrease during the corresponding winter seasons that were more affected by COVID-19 related restrictions. International tourism decreased by 72% in 2020 according to UNWTO, while visits to national parks and protected areas declined around 35% based on estimates made with data available from representative group of countries, supported by an increase in domestic tourism.

With the incremental lifting of travel restrictions and tourism recovery worldwide, some trends related to mountain tourism have emerged:

- Resilience of domestic tourism in mountain regions;
- Hiking as an increasingly practiced lifestyle and motive of travel beyond local destinations; and
- The discovery of mountains by domestic tourists as a generator for growing demand among international travellers in renowned mountain ranges and destinations.

05
CASE STUDIES

Mobile phone positioning data presents new opportunities to measure the number of visitors in mountain areas, their origin, average length of stay and even how often they visit. The below case studies offer examples of how to use such technology for tourism development purposes.

5.1 INCORPORATING INNOVATIVE TECHNOLOGIES TO QUANTIFY MOUNTAIN TOURISM

ANDORRA

During the 11th World Congress on Snow and Mountain Tourism held in Andorra in 2021,[37] the country's public telecommunications operator presented the outcomes of a study using mobile phone data.

The objective of the study, conducted between 2019 and 2021, was to develop a micro-segmentation of tourist profiles that could be used by public and private stakeholders to improve their knowledge about visitors and how they experience the country. Multiple spatial variables were collected from tourists' mobile phones to answer the following questions:

- What was the seasonal pattern of demand?;
- How did visitors enter and leave the country? (Andorra only has two entry borders);
- What was their origin?;
- How often have they visited the destination? (to assess frequency);
- What was their socioeconomic level?; and
- Where did they spend time during the day in the mountain areas (i.e., skiing in winter or trekking in summer), and in villages (e.g., shopping, eating, overnighting)?

The analysis concluded that in 2021, among a total of 2.3 million visitors:

- 46% were day visitors while 44% were tourists (overnight visitors);
- 9% were recurrent visitors; and
- 2% were residential or cross border.

The challenge for public and private stakeholders is to work together to turn this detailed information into effective destination marketing campaigns, focussing on improving the customer experience and pairing offer and demand more quickly, based on their improved knowledge of visitor needs, interests, preferences and purchasing power.

37 Calzada, G. (2022), 'Keynote on understanding mountain tourism through data', 11th World Congress on Snow and Mountain Tourism, UNWTO, Madrid, online available at: https://www.unwto.org/events/11th-world-congress-on-snow-and-mountain-tourism [25-11-2022].

POLAND[34]

The Polish Tourist Organisation (PTO) identified two main constraints to measure tourism flows in specific locations such as mountain destinations, parks or trails: timeliness of official tourism statistics and lack of disaggregated data.

To address this issue the PTO decided to explore the use of geomarketing methods and analysis based on data from phones and mobile devices. This would improve timely knowledge on tourism flows and visitor profiles through real-time data, and enable the organisation to create more targeted products and marketing campaigns.

A study of winter tourism in mountain communities was conducted by Selectivv for PTO, with the help of a bespoke map of mountain municipalities, the study could determine the number of unique users by visitor category, the volume of traffic by destinations and the length of stay.

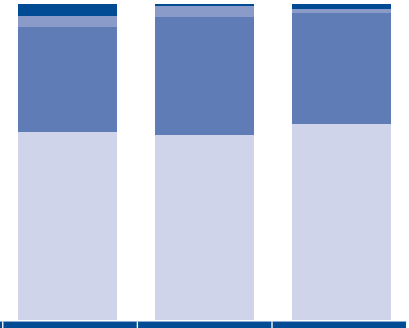
As shown in the map below, the analysis included 186 municipalities in mountainous regions, including 51 municipalities in the Lower Silesia Province, 78 municipalities in the Małopolska Province, 2 municipalities in the Opolskie Province, 23 municipalities in the Podkarpackie Province, 27 municipalities in the Silesian Province and five municipalities in the Świętokrzyskie Province. The period covered was 2019–2021.

Figure 5.1: Visitor and tourist flows in mountainous regions in Poland, 2019–2021

38 Based on: Polish Tourist Organisation and Selectivv (2022), UNWTO-ETC DataLab webinar on 'Monitoring Tourism Flows based on Mobile Positioning Data', presentation from 10 November 2022.

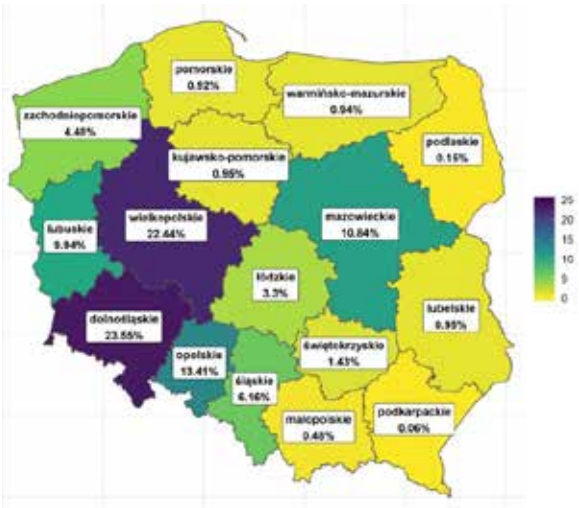
The example of Lower Silesian Province shows the number of unique users for specific period of time between 2019 and 2021, broken down in two different groups: international and domestic visitors/tourists. Among other conclusions, the data reveals that visitors to the Lower Silesian Province are mostly domestic (around 60% of the total) with a slight increase over the period covered. Among domestic tourists, 24% came from Dolnoslaskie and 22% from Wielkopolskie.

Figure 5.2: Number of unique users in the analysed periods in the Lower Silestian Province, December 2019 – February 2022



	14-12-2019/ 29-02-2020 (%)	12-12-2020/ 28-02-2021 (%)	11-12-2021/ 28-02-2022 (%)
Foreign visitors	3.5	0.4	1.3
Foreign tourists	3.7	3.3	1.3
Domestic visitors	33.1	37.5	35.2
Domestic tourists	59.7	58.7	62.2

Figure 5.3: Origin of domestic tourists in the Lower Silestian Province, December 2019 – February 2022



SPAIN

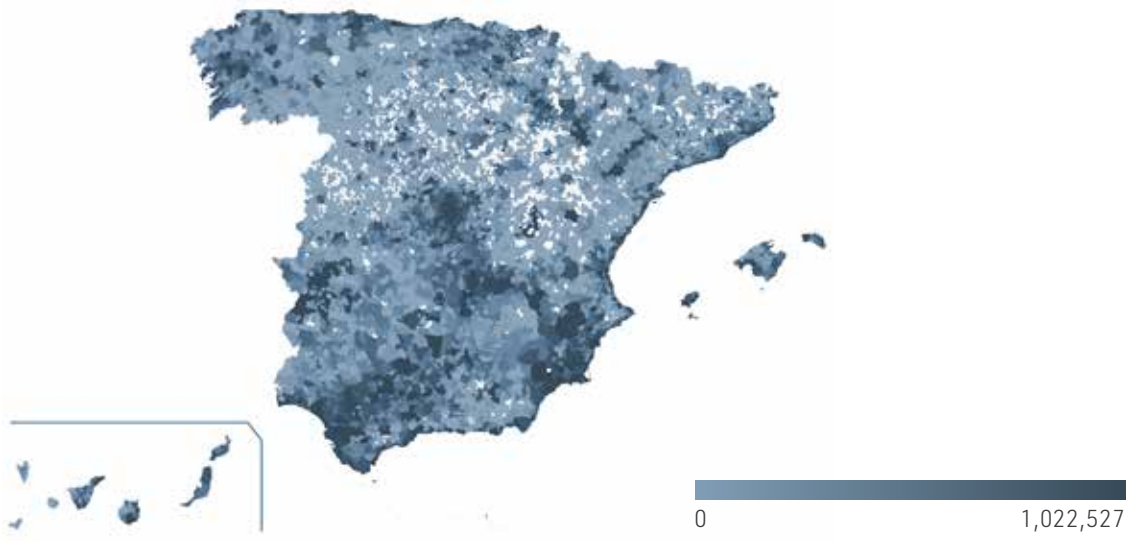
In July 2019, the Spanish National Statistics Institute (INE) launched a new project to measure tourism using mobile phone positioning data. The project aims to measure:

- Origin and country/countries visited by Spanish resident tourists on their trips abroad;
- Origin of foreign tourists who visit different autonomous communities, provinces and municipalities in Spain; and
- Origin and destination of the resident tourists who visit the different autonomous communities, provinces and municipalities.

By using these new methods, INE has brought about several improvements when it comes to measuring tourism, including access to much more detailed visitor information, and the possibility to consolidate mountain tourism data as the sum of multiple activities and reasons to visit. To achieve this, the approach for mobile data processing for mountain tourism should consider that:

- Mountain areas must be clearly defined for statistical purposes;
- Close to real-time tracking is possible and will allow to publish results faster which may streamline policymaking; and
- New data needs to be collected and processed that:
  - Incorporates travel motivations;
  - Establishes a visitor segmentation;
  - Determines accommodation usage and accommodation typologies; and
  - Measures expenditure by combining anonymized financial and mobile phone data.

Figure 5.4: Measurement of tourists from the position of cell phones at municipal level, December 2021



5.2 BEYOND VOLUME: MEASURING SUSTAINABILITY IN MOUNTAIN DESTINATIONS

SOUTH TYROL, ITALY

South Tyrol is located at the heart of the Italian Alps. The landscape is dominated by mountains with the highest peak, the Ortler (3,905 m), in the far west. With about 64.5% of the total area situated 1,500 m above sea level, and only 14% below 1,000 m, South Tyrol is famous for its mountain landscape which covers approximately 90% of the territory. In addition, 25% of South Tyrol is designated as protected areas.

Mountain tourism monitoring in South Tyrol is done through the Sustainable Tourism Observatory of South Tyrol, a member of the UNWTO International Network of Sustainable Tourism Observatories (INSTO).[39]

Table 5.1: Tourism indicators and impact caused by COVID-19 in Italy and South Tyrol, 2018–2020 (× 1,000)

Italy[a]	2018	2019	2020	Change (%) 2020/2019
Inbound				
Total arrivals	**93,229**	**95,399**	**38,419**	**-60**
Overnight visitors	61,567	64,513	25,190	-61
Same day	31,661	30,886	13,229	-57
Total overnights	**216,511**	**220,663**	**65,444**	**-70**
Domestic				
Total trips	**145,307**	**132,858**	**74,654**	**-44**
Overnight visitors	62,861	54,254	34,130	-37
Same day	82,446	78,604	40,524	-48
Total overnight stays	**212,334**	**216,077**	**143,003**	**-34**
South Tyrol[b]				
Arrivals (inbound and domestic)	**7,520**	**7,704**	**4,627**	**-40**
Share of total visitors to Italy	3.2%	3.4%	4.1%	
Share of total tourists to Italy	6.0%	6.5%	12.6%	
Overnight stays (inbound and domestic)	**33,329**	**33,685**	**21,730**	**-35**
Share of total overnight stays in Italy	7.8%	7.7%	10.4%	

Sources: a) World Tourism Organization (2022/b), *Compendium of Tourism Statistics, Data 2016–2020, 2022 Edition,* UNWTO, Madrid, DOI: https://doi.org/10.18111/9789284423583.

b) Eurac Research (n.d.), 'Sustainable Tourism Observatory of South Tyrol', Eurac Research, Bolzano, available online at: https://sustainabletourism.eurac.edu/ [25-11-2022].

39 Eurac Research (n.d.), 'Sustainable Tourism Observatory of South Tyrol', Eurac Research, Bolzano, available online at: https://sustainabletourism.eurac.edu/ [25-11-2022].

The UNWTO INSTO[40] is a network of observatories monitoring the economic, environmental and social impacts of tourism at destination level. It supports and of evidence-based decision-making at the destination level, fostering sustainable practices both locally and globally.

There are 11 core issue areas that INSTO members are required to monitor at least to a certain extent:

Table 5.2: INSTO mandatory issue areas

Economic	▪ Tourism seasonality ▪ Employment ▪ Destination economic benefits
Social	▪ Local satisfaction ▪ Accessibility
Environmental	▪ Energy management ▪ Water management ▪ Wastewater (sewage) management ▪ Solid waste management ▪ Climate action
Governance	▪ Governance

The South Tyrolean Observatory strives to stay on top of current developments and process the most up-to-date data. The indicators monitored are structured around three main categories (economy, society and environment), which together provide a holistic view of tourism impacts in the region.

Key figures from the South Tyrol Observatory annual reports, 2019–2021

Economy:[41]

- In 2019, more than 7.7 million tourist arrivals and 33.7 million overnight stays were registered in South Tyrol;
- In 2020, South Tyrol registered 4.6 million tourist arrivals and 21.7 million overnight stays. This implies a decline of 40% in arrivals and of 35% in stays compared to 2019;
- German and Italian tourists have accounted for more than 80% of overnight stays in South Tyrol for over twenty years; and
- Employees in the accommodation and food and beverage industry account for about 14% of total employment in South Tyrol.

40 World Tourism Organization (n.d.), *UNWTO International Network of Sustainable Tourism Observatories,* UNWTO, Madrid, available online at: https://www.unwto.org/sustainable-development/unwto-international-network-of-sustainable-tourism-observatories [25-11-2022].

41 Eurac Research (n.d.), 'Sustainable Tourism Observatory of South Tyrol', Eurac Research, Bolzano, available online at: https://sustainabletourism.eurac.edu/ [25-11-2022].

Society:

- The overall level of satisfaction of tourists with their holiday in the destination is extremely high (98.8%); and
- The share of South Tyrolean households who view tourism as beneficial for South Tyrol overall lies at 77.2%.

Environment:

- In 2018, at least 9% of total electricity consumption in the destination was directly attributable to the tourism sector;
- Accommodation facilities are estimated to account for about 9% of the total waste production in the region; and
- A survey among the South Tyrolean tourism boards has shown that most organizations (82.6%) consider issues of nature conservation in their strategic plans and promote biodiversity through near-natural design and cultivation of native plants.

06 CONCLUSIONS

The lack of data related to mountain tourism, identified in the 2021 FAO/UNWTO study *Mountain tourism – Towards a more sustainable path,*[42] is confirmed by the research conducted for this report.

The methodology implemented for this report allowed to estimate the share of mountain tourism in international tourism (9% to 16%), while the scarcity of data related to domestic tourism did not make possible to estimate the contribution of this important segment.

This publication aimed to address the above mentioned lack of data and improve knowledge about the volume of tourism in mountains, with a view to advance understanding of key issues related to its planning and management.

Establishing a deeper understanding of mountain tourism and effectively measuring it is crucial to being able to identify market trends, recognize development opportunities, and implement sustainable policies and strategies.

A collective effort involving public and private stakeholders across the value chain can improve data collection, standardization and delivery for a more comprehensive assessment of mountain tourism. This can in turn raise awareness of its socioeconomic importance and result in more targeted policies that can create jobs, support small and medium-sized enterprises (SMEs) and attract green investments in infrastructure and the digitalization of tourism services.

The lack of studies and appropriate data, as well as the challenges of establishing a common approach for data collection, affect the availability of relevant information on tourism in mountain areas. However, many countries are starting to realize that mountain tourism is important for economic diversification and may be open to implement surveys and innovative methods to measure and capture the complete scope of mountain tourism, such as the use of mobile positioning data.

Mountain tourism development is indeed an opportunity to generate economic activity in low population density areas with risk of depopulation as it provides new employment alternatives and can promote social inclusion. It also provides, when well-managed, opportunities to contribute to conservation of natural and cultural resources.

Mountain tourism development is affected by sustainability issues and highly exposed to the effects of climate change (e.g., changes in the intensity and frequency of precipitation and temperatures, or increased risk of wildfires) which could alter the landscape and limit its appeal. In recent years, with climate change causing a lack of snow during the winter in many areas,

42 Romeo R., Russo, L., Parisi F., Notarianni M., Manuelli S. and Carvão S. (2021), *Mountain tourism – Towards a more sustainable path,* Rome, FAO, DOI: https://doi.org/10.4060/cb7884en.

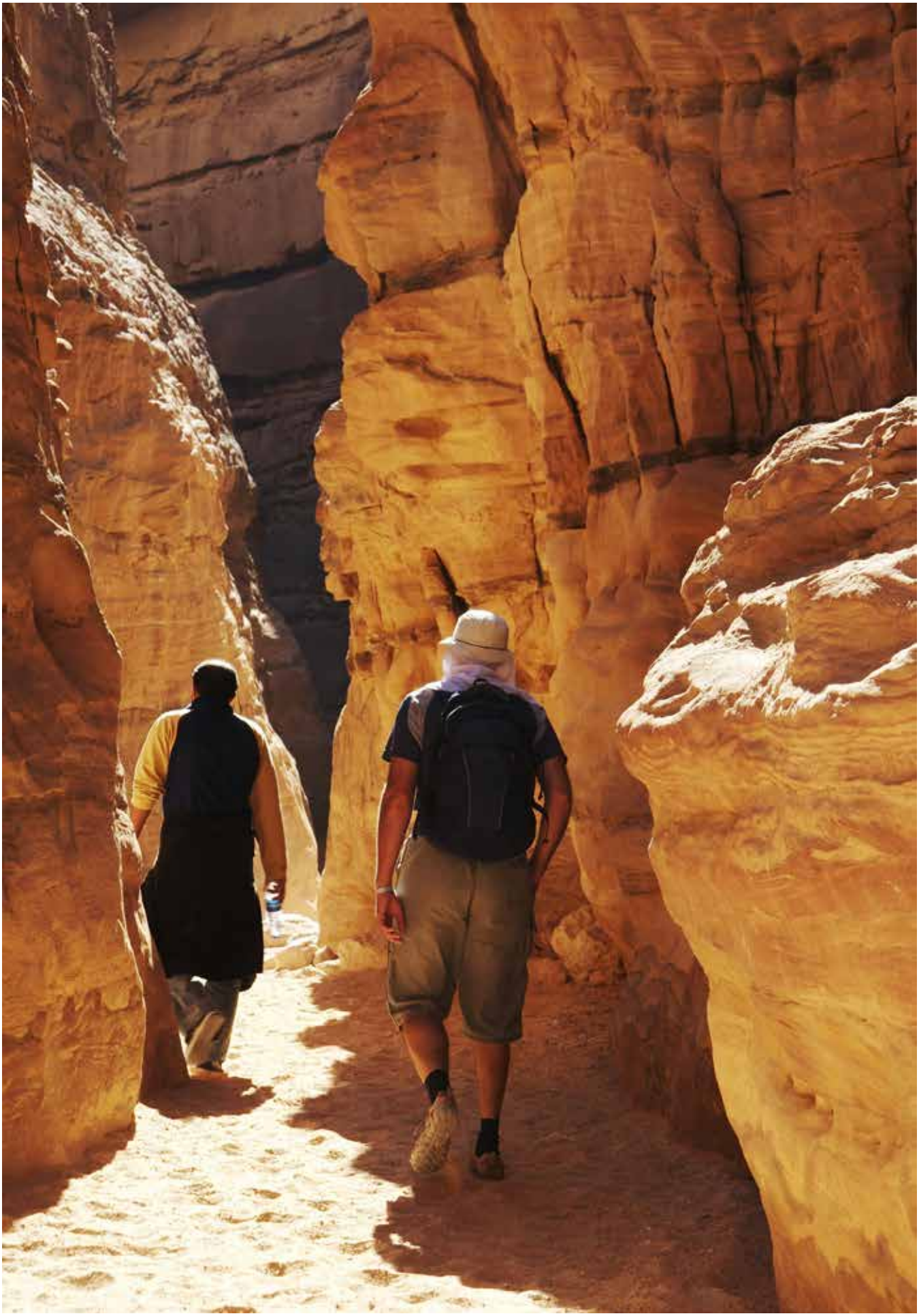
an increasing interest in mountains is expected during the summer season. New summer products and activities are being developed and promoted to visitors, and compared to the lowlands cooler climate is becoming a competitive advantage for higher-altitude destinations.

The growing demand for mountain destinations requires policymakers to balance tourism development with nature protection programmes, carefully monitoring sensitive areas and assessing carrying capacity. Policies also need to ensure both local and visitor satisfaction, enhancing the quality of life of local inhabitants, as well as the visitor's experience.

To support sustainable and resilient mountain communities and ecosystems, and ensure tourism development in these areas is aligned with the SDGs, the understanding and measurement of mountain tourism is key. It will allow destinations to preserve mountains for future generations, while creating new attractions, distribute tourism's benefits and tackle the various challenges ahead.

Therefore, a common ground must be found to:

- Identify and put in place mechanisms to correctly measure mountain tourism;
- Implement innovative technologies for tourism monitoring, including the use of mobile phone data;
- Broaden the indicator basis for measuring mountain tourism to include monitoring its economic, social and environmental impacts in view to foster sustainable practices – locally and globally – that benefit local people, particularly vulnerable populations, and avoid negative impacts;
- Create partnerships between the public, private and community actors to develop adequate measurement and monitoring, as well as the necessary training; and
- Adjust to the latest trends of tourism demand and embrace the digitalization of the sector.



07 THE WAY FORWARD

To support sustainable and resilient mountain communities and ecosystems, and ensure tourism development in these destinations is aligned with the SDGs, the understanding and measurement of mountain tourism is key.

7.1 RECOMMENDATIONS

Recommendations to improve the measurement of mountain tourism include:

1 **Advance data** and **evidence-based** tourism **policies** and strategies in mountain areas to maximize the impact of tourism on employment and ensure social sustainability, as well as manage any negative impacts on the environment. According to the UNWTO member state survey, the main purposes for the development of mountain tourism are to create opportunities for **local communities,** generate economic revenue and create **sustainable tourism products.** On the other hand, inadequate **infrastructure** and **sustainability** are the main challenges identified to further advance effective development and promotion of mountain tourism.

2 **Invest in statistical systems** in line with the *International Recommendations of Tourism Statistics,*[43] and complete all stages and develop indicators. **Ensure that the measurement goes beyond volume and includes the three dimensions of sustainability** – economic, social and environmental. The Statistical Framework for Measuring the Sustainability of Tourism (MST)[44] can be useful when assessing the impact of tourism in the context of sustainable mountain development. Systematic monitoring is critical to better manage resources and waste, as well as for defining and managing destinations' carrying capacity. As a reference, the South Tyrolean Observatory, which is part of the UNWTO INSTO, produces **data and indicators** ranging from waste management to measuring local and visitor satisfaction.

3 Explore the use of **mobile positioning data,** in coordination with tourism statistics, to measure the number of visitors in mountain areas, their origin, average length of stay and recurrence, as shown by the initiatives taken by Andorra, Poland and Spain. Exchange of experiences and best practices among destinations could lead to wider adoption of innovative solutions for enhanced measurement of mountain tourism.

4 Enhance **market intelligence** to attract new segments and better understand consumer trends, and embrace the **digitalization** of the sector which facilitates the collection and analysis of data related to mountain tourism. The development and publication of specific reports using a combination of official tourism statistics with big data sources, such as data from mobile positioning or credit card spending, can provide a more complete assessment of mountain tourism's trends and evolution.

5 To further underline the importance of mountain tourism, **NTAs should identify the most important mountain destinations and support the creation of specific mountain tourism observatories,** not only focussing on volume (i.e., number of visitors), but integrating also the environmental and social aspects of tourism, ensuring an adequate measurement of the impact of the sector in mountainous areas.

43 United Nations (2010), *International Recommendations for Tourism Statistics 2008,* UN, New York, available online at: https://www.e-unwto.org/doi/epdf/10.18111/9789211615210.

44 World Tourism Organization (n.d.), 'Measuring the Sustainability of Tourism', UNWTO, Madrid, available online at: www.unwto.org [16-01-2023].

7.2 INDICATORS

Using the INSTO framework and the Sustainable Tourism Observatory of South Tyrol as a reference, the measurement of mountain tourism should cover several indicators, including but not limited to:

ECONOMY

- **Seasonality:** Monitoring the percentage of tourist arrivals per market, months and weeks helps to identify high and low peaks and to foresee and tackle related issues in a timely manner. This is critical to manage mountains' carrying capacity and ensure effective distribution of visitor flows.

- **Employment:** Measuring this aspect helps to understand to what extent tourism-related activities generate employment, as well as the availability of equal opportunities for men and women, residents and non-residents.

- **Economic benefits:** Measuring economic benefits is key to assess how much wealth tourism produces and how it is distributed, as well as the economic structure and resilience of the destination.

SOCIETY

- **Governance:** Collaboration between government, businesses, and communities is essential for the successful implementation of a sustainable development concept.
- **Local and visitor satisfaction:** Ensuring the satisfaction of both locals and visitors is critical to the success of destination development and maintaining the quality of life and holiday experiences. This requires consistent monitoring of tourism's impact on residents and conducting regular surveys to gauge their level of satisfaction.

ENVIRONMENT

- **Energy management:** An increase in the number of tourists will lead to a direct increase of energy consumption in the destination.
- **Water management:** Various tourist activities, for example skiing or golf, require large amounts of water.
- **Wastewater management:** A high concentration of tourism in certain months of the year can lead to overloading of water treatment plants.
- **Waste management:** Sorting waste is more complicated in tourism, partly due to the high prevalence of single-use products, but often also due to tourists' lack of knowledge of the local rules for waste separation.
- **Mobility:** During high season, individual modes of transportation often result in congested roads and increased pollution levels, leading to discomfort for both residents and tourists.
- **Nature conservation:** Protected areas guarantees greater sensitivity towards the environment and more nature-friendly tourism practices.

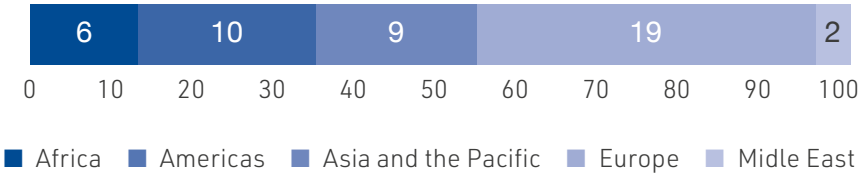
ANNEXES

ANNEX I
SURVEY TO UNWTO MEMBER STATES ON MOUNTAIN TOURISM DATA

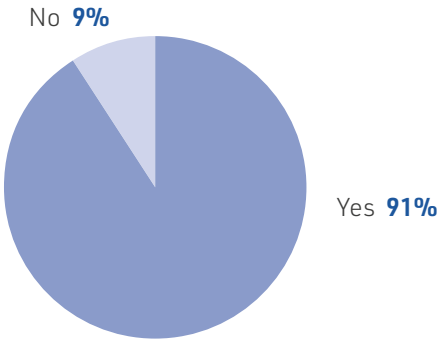
The following figures are based on data derived from our survey, developed specifically for this report, to comprehensively map mountain tourism data.

The survey was launched in July 2022 to relevant tourism stakeholders, mostly National Tourism Administrations from UNWTO's 160 member countries. The survey concluded in December 2022, and full responses from 46 countries were received.

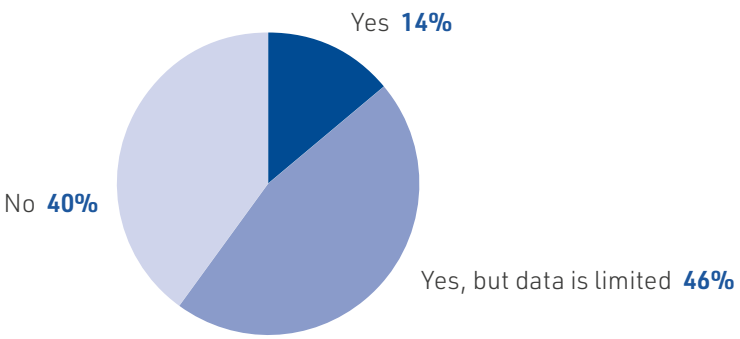
1. Where is your country located? *(open question)*



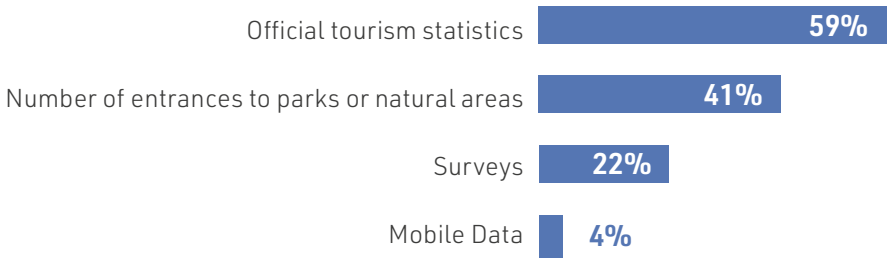
2. Do you consider your country to fit into the definition of mountain tourism? *(single choice)*



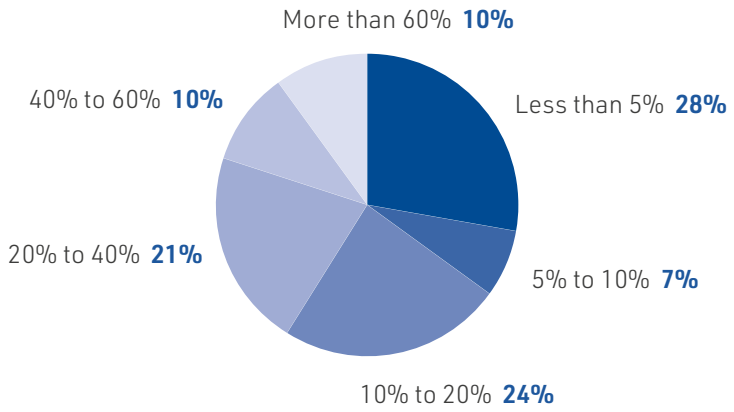
3. Do you collect data on the number of tourists who visit mountain destinations? *(single choice)*



4. **How do you collect data on mountain tourism?** *(multiple choice)*



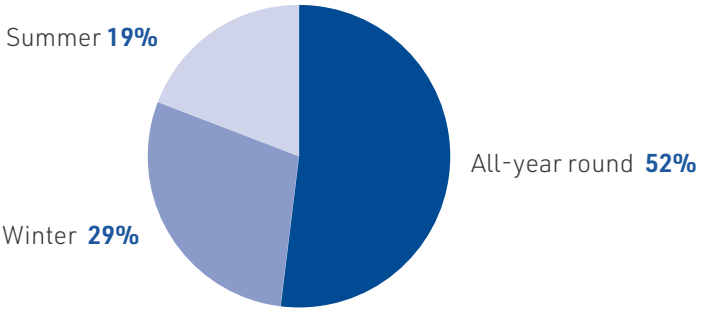
5. **What is the share of mountain tourism in your country's total tourist arrivals?** *(single choice)*



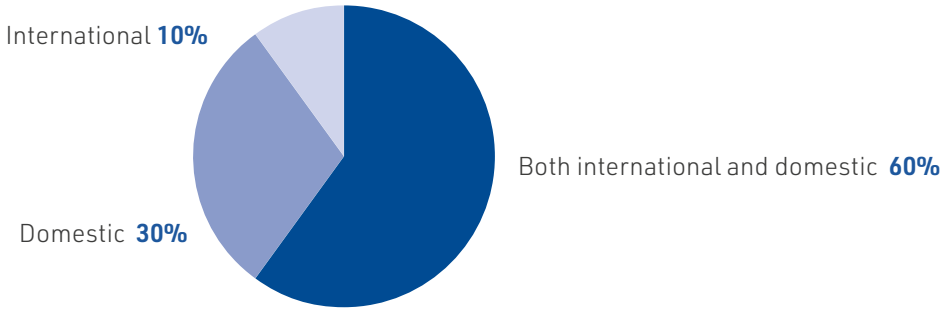
6. **If available, could you please indicate the number of mountain tourism visitors (international/domestic) and/or nights spent in your country during the last ten years (yearly/monthly)? If possible, indicate source of data and website.** *(open question)*

7. **Do you have information about the economic contribution (revenues, employment, etc.) of mountain tourism in your destination? Please provide for each indicator: name, value (in EUR or in USD if in currency) or number, share, and any relevant comment.** *(open question)*

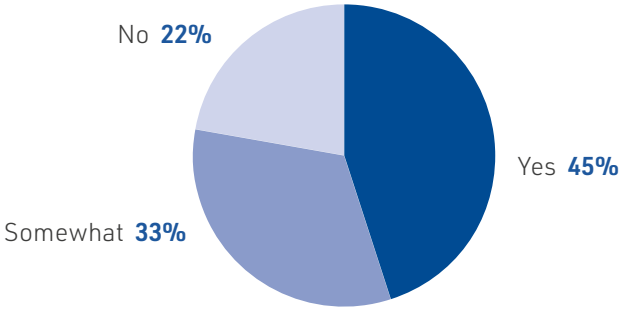
8. **What is/are the peak season(s) for mountain tourism in your country?** *(single choice)*



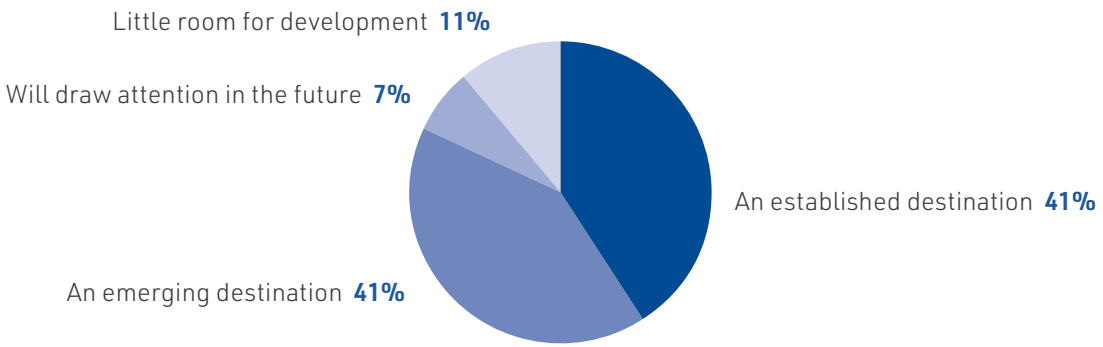
9. **Are mountain tourists domestic and/or international?** *(single choice)*



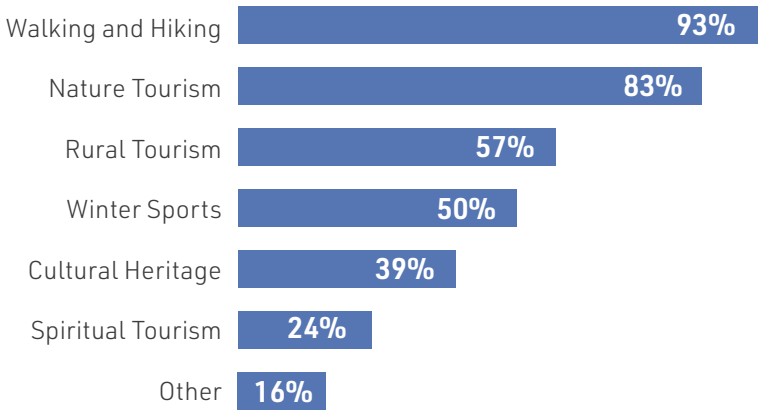
10. **Have you noticed an increase in tourism to mountains during the pandemic?** *(single choice)*



11. **What is the current stage of mountain tourism development in your country?** *(single choice)*

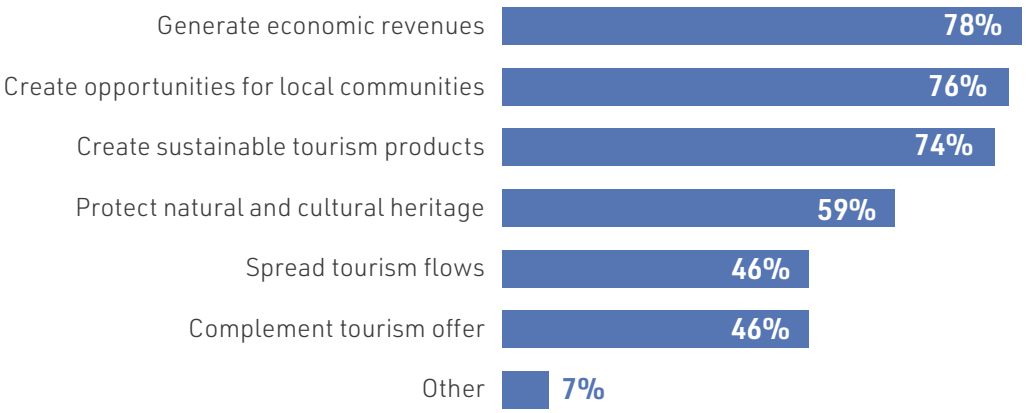

Little room for development 11%
Will draw attention in the future 7%
An established destination 41%
An emerging destination 41%

12. What activity related to mountain tourism is predominant in your country? *(multiple choice)*



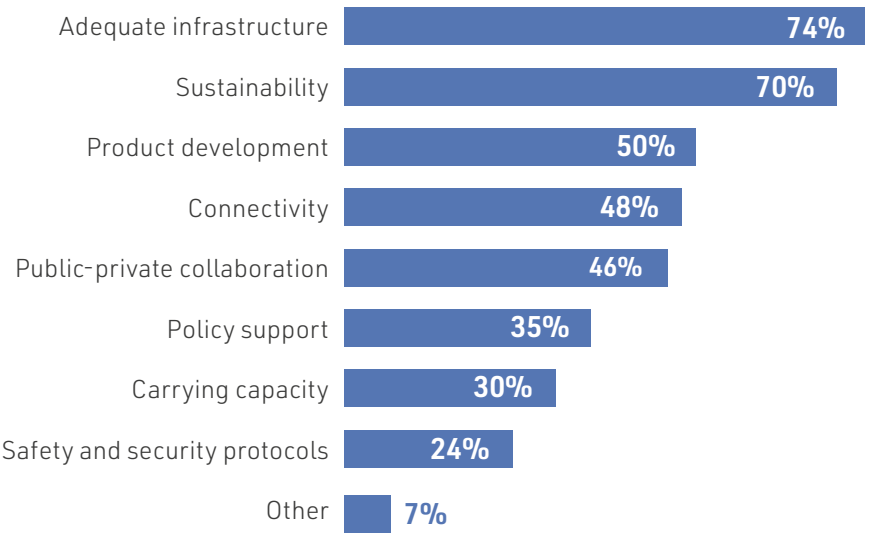
Note: Other include birdwatching, adventure, climbing, mountaineering.

13. What are the main purposes of mountain tourism in your country? *(multiple choice)*



Note: Other include address seasonality and structural changes.

14. What are the main challenges your country faces when developing and promoting mountain tourism? *(multiple choice)*



Note: Other include tourism acceptance among residents.

ANNEX II
DATA SOURCES FOR DESK RESEARCH

As part of the desk research, the following data sources were consulted:

The UNWTO *Compendium of Tourism Statistics*[45] (editions 2020 and 2022) provides data updated yearly on inbound, outbound and domestic tourism, as well as on the number and types of tourism industries, the number of employees by tourism industries, and macroeconomic indicators related to international tourism. Data is collected from countries by UNWTO through a series of yearly questionnaires that are in line with the *International Recommendations for Tourism Statistics* (IRTS:2008)[46] standard led by UNWTO and approved by the United Nations.

National statistical offices and other official sources

Annual reports of national park authorities providing visitation figures for national parks and or protected areas:

- Administración de Parques Nacionales de Argentina (2021), *Visitantes en Áreas Protegidas Nacionales – Serie 2003–2020,* Registro Nacional de Autorizaciones, Recaudaciones e Infracciones, Administración de Parques Nacionale, available online at: https://www.argentina.gob.ar/parquesnacionales [17-03-2023].
- African Parks (n.d.), *Annual Reports (2005–2020),* African Parks Foundation, available online at: https://www.africanparks.org/ [17-03-2023].
- Atout France (2021), *Les parcs nationaux de France en chiffres clés,* available online at: http://www.parcsnationaux.fr/fr/actualites/les-parcs-nationaux-de-france-en-chiffres-cles [17-03-2023].
- Corporación Nacional Forestal (CONAF) Chile (2021), *Estadísticas de visitación,* available online at: https://www.conaf.cl/parques-nacionales/visitanos/estadisticas-de-visitacion/ [17-03-2023].
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- Statistical Office of the Republic of Slovenia
- State Secretariat for Economic Affairs (SECO), Switzerland
- Visit Andorra

GLOSSARY OF TOURISM TERMS AND TERMINOLOGY, DEFINITIONS

Mountain Tourism is a type of tourism activity which takes place in a defined and limited geographical space such as hills or mountains with distinctive characteristics and attributes that are inherent to a specific landscape, topography, climate, biodiversity (flora and fauna) and local community.

Tourism destination: A tourism destination is a physical space with or without administrative and/or analytical boundaries in which a visitor can spend an overnight. It is the cluster (co-location) of products and services, and of activities and experiences along the tourism value chain and a basic unit of analysis of tourism. A destination incorporates various stakeholders and can network to form larger destinations. It is also intangible with its image and identity which may influence its market competitiveness.

Tourism value chain: The tourism value chain is the sequence of primary and support activities which are strategically fundamental for the performance of the tourism sector. Linked processes such as policy making and integrated planning, product development and packaging, promotion and marketing, distribution and sales and destination operations and services are the key primary activities of the tourism value chain.

Tourism product: A tourism product is a combination of tangible and intangible elements, such as natural, cultural and man-made resources, attractions, facilities, services and activities around a specific center of interest which represents the core of the destination marketing mix and creates an overall visitor experience including emotional aspects for the potential customers. A tourism product is priced and sold through distribution channels and it has a life-cycle.

Visitor: A visitor is a traveller taking a trip to a main destination outside his/her usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited (IRTS 2008, 2.9). A visitor (domestic, inbound or outbound) is classified as a tourist (or overnight visitor), if his/her trip includes an overnight stay, or as a same-day visitor (or excursionist) otherwise (IRTS 2008, 2.13).

ABBREVIATIONS AND ACRONYMS

FAO	Food and Agriculture Organization of the United Nations
GDP	gross domestic product
INSTO	International Network of Sustainable Tourism Observatories
SDG	Sustainable Development Goal
NTA	national tourism administration
UN	United Nations
UNEP	United Nations Environment Programme
UNWTO	World Tourism Organization

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